

ORDER NO. DSC0503006A5
B26

Digital Camera

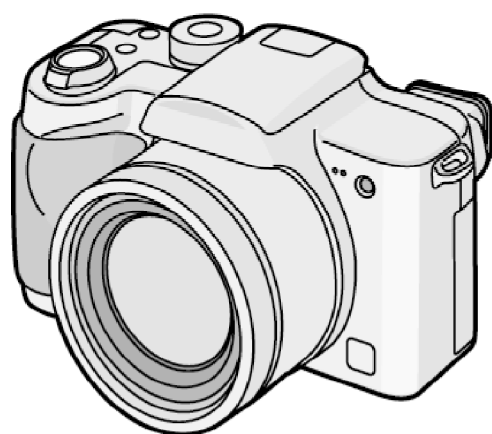


DMC-FZ4PP / DMC-FZ4EG

Vol. 1

Colour

(S).....Silver Type



SPECIFICATIONS

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Panasonic


1. INTRODUCTION

- This Service Manual contains technical information which will help service personnel to understand and service the Digital Camera DMC-FZ4PP/EG-S.
- The Digital Camera DMC-FZ4PP-S/EG-S has been developed based on DMC-FZ5PP-S.
- Since this Service Manual does not cover the same part which is already described in the Service Manual for DMC-FZ5PP-S, when

servicing, refer to the descriptions in the Service Manual for DMC-FZ5PP-S; Order No.DSC0503003C0. (Service Manual for Vol. 1)

2. COMPARISON CHART

- The comparison chart for concerned model is listed here under, Please refer to comparison chart for concerned model.

Notes: 1.* Be sure to make your orders of replacement parts according to this list.
 2. IMPORTANT SAFETY NOTICE
 Components identified with the mark  have the special characteristics for safety.
 When replacing any of these components, use only the same type.
 3. The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.
 4. Supply of CD-ROM, in accordance with license protection, is allowable as replacement parts only for customers who accidentally damaged or lost their own.

Definition of Parts supplier:

1. Parts marked with [AVC-SPC] in the remarks column are supplied from AVC COMPANY CS (AVC-SPC). Others are supplied from MKE SAIJO (MKE).

[DMC-FZ4PP-S]

- The following table shows the difference between the basic Model DMC-FZ5PP-S and the new model DMC-FZ4PP-S.

DMC-FZ4PP-S Mechanical Replacement Part					(A)=Added (C)=Changed (D)=D
Ref No.	Original Part No. (DMC-FZ5PP-S)	New Part No. / (DMC-FZ4PP-S)	QTY	Part Name & Description	Remarks
CASING SECTION					
22	VGQ8427	---	1 → 0	SHADING SHEET	(D)
23	VEE1A69	VEE1A34	1	LCD BACKLIGHT CONNECTOR	(C)
64	VEK0H61	VEK0H67	1	CCD C.B.A.	[AVC-SPC] (C)
PACKING SECTION					
103	K1HA08CD0005	K1HA08CD0006	1	AUDIO VIDEO CABLE W/ PLUG	[AVC-SPC] (C)
120	VPK2975	VPK2991	1	PACKING CASE,PAPER	(C)
126	RP-SD016BVE0	RP-SD008BVE0	1	SD CARD	(C)


NOTE:

1. CCD C.B.A.: Although Part No. is different from DMC-FZ5PP-S, Circuit design is the same. (Only CCD chip is different.)
Therefore, please refer to service manual for DMC-FZ5PP-S.

[DMC-FZ4EG-S]

- The following table shows the difference between the basic Model DMC-FZ5PP-S and the new model DMC-FZ4EG-S.

DMC-FZ4EG-S Mechanical Replacement Part					(A)=Added (C)=Changed (D)=D
Ref No.	Original Part No. (DMC-FZ5PP-S)	New Part No. / (DMC-FZ4EG-S)	QTY	Part Name & Description	Remarks
CASING SECTION					
22	VGQ8427	---	1 → 0	SHADING SHEET	(D)
23	VEE1A69	VEE1A34	1	LCD BACKLIGHT CONNECTOR	(C)
64	VEK0H61	VEK0H67	1	CCD C.B.A.	[AVC-SPC] (C)
PACKING SECTION					
101	DE-993BB	DE-994AA	1	AC ADAPTOR	⚠ (C)
103	K1HA08CD0005	K1HA08CD0006	1	AUDIO VIDEO CABLE W/ PLUG	[AVC-SPC] (C)
106	VFF0254-S	VFF0255-S	1	CD-ROM	SEE NOTE [AVC- (C)]
108	VPF1100	VPF1132	1	BAG,POLYETHYLENE	[AVC-SPC] (C)
110	VQT0Q09	VQT0Q16	1	INSTRUCTION BOOK (GERMAN)	⚠ [AVC-SPC] (C)
110	VQT0Q10	VQT0Q17	1	INSTRUCTION BOOK (FRENCH)	⚠ [AVC-SPC] (C)
110	---	VQT0Q18	0 → 1	INSTRUCTION BOOK (ITALIAN)	⚠ [AVC-SPC] (A)
110	---	VQT0Q19	0 → 1	INSTRUCTION BOOK (DUTCH)	⚠ [AVC-SPC] (A)
111	VQT0L70	VQT0L78	1	INSTRUCTION BOOK/ APPLICATION / (GERMAN/ FRENCH)	[AVC-SPC] (C)
111	---	VQT0L77	0 → 1	INSTRUCTION BOOK/ APPLICATION / (ITALIAN/ DUTCH)	[AVC-SPC] (A)
120	VPK2975	VPK2992	1	PACKING CASE,PAPER	(C)

DMC-FZ4EG-S Mechanical Replacement Part					(A)=Added (C)=Changed (D)=D
Ref No.	Original Part No. (DMC-FZ5PP-S)	New Part No. / (DMC-FZ4EG-S)	QTY	Part Name & Description	Remarks
126	RP-SD016BVE0	RP-SD008BVE0	1	SD CARD	(C)
128	---	RJA0019-2X	0 → 1	AC CORD W/PLUG	 (A)

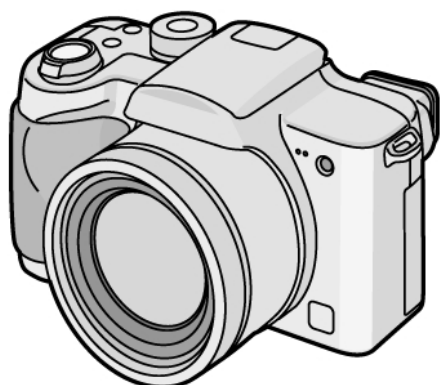
NOTE:

- 1. CCD C.B.A.: Although Part No. is different from DMC-FZ5PP-S, Circuit design is the same. (Only CCD chip is different.) Therefore, please refer to service manual for DMC-FZ5PP-S.**

Service Manual

Digital Camera

LUMIX
SD LEICA
DC VARIO-ELMARIT



DMC-FZ5PP
DMC-FZ5PL
DMC-FZ5EB
DMC-FZ5EG
DMC-FZ5EGM
DMC-FZ5GC
DMC-FZ5GD
DMC-FZ5GK
DMC-FZ5GN
DMC-FZ5GT
DMC-FZ5SG

Vol. 1

Colour

(S).....Silver Type

(K).....Black Type

Panasonic

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ITEM	SPECIFICATION	ITEM	SPECIFICATION
Camera Effective pixels	5,000,000 pixels		
Image sensor	1/2.5" CCD, total pixel number 5,360,000 pixels Primary color filter	Flash	Built-in pop up flash, Flash range: (ISO AUTO) Approx. 0.98 feet (30 cm) - 14.8 feet (4.5 m) (Wide) AUTO, AUTO/Red-eye reduction, Forced ON (Forced ON/Red-eye reduction), Slow sync./ Red-eye reduction, Forced OFF
Lens	Optical 12X zoom, f=6-72 mm (35mm film camera equivalent: 36-432 mm)/F2.8-3.3	Microphone	Monaural
Digital zoom	Max. 4X	Speaker	Monaural
Focus	Normal/Macro, 9-area-focusing/ 3-area-focusing (high speed)/ 1-area-focusing (high speed)/ 1-area-focusing/Spot-focusing/AF trigger switching	Recording media	SD Memory Card/MultiMediaCard
Focus range	0.98 feet (30 cm) (Wide)/6.56 feet (2 m) (Tele)-∞ Macro (Except Tele)/Simple/Aperture-priority AE/ Shutter-priority AE/Manual exposure: 0.16 feet (5 cm) (Wide)/6.56 feet (2 m) (Tele)-∞ Macro (Tele): 3.28 feet (1 m)-∞	Picture size	2560×1920, 2048×1536, 1600×1200, 1280×960, 640×480, 1920×1080 (Still picture) 320×240 (Motion image)
Shutter system	Electronic shutter + Mechanical shutter	Quality	Fine/Standard/TIFF
Burst recording	Burst speed: 3 frames/second (high speed), 2 frames/second (low speed), Approx. 2 frames/second (unlimited) Number of recordable pictures: Max 7 frames (standard), 4 frames (fine), Depends on the remaining capacity of the card. (unlimited) (Performance in burst recording is only with SD Memory Card. MultiMediaCard performance will be less.)	Recording file format	Still Picture: JPEG (Design rule for Camera File system, based on Exif 2.2 standard)/TIFF (RGB), DPOF corresponding Still picture with audio: JPEG (Design rule for Camera File system, based on Exif 2.2 standard) + 640×480 pixels QuickTime (picture with audio) Motion images: QuickTime Motion JPEG
Motion image recording	320×240 (30 or 10 frames/second with audio. The maximum recording time depends on the capacity of the card.)	Interface	Digital: USB 2.0 (Full Speed) Analog video/audio: NTSC/PAL Composite (Switched by menu), Audio line output (monaural)
ISO sensitivity	AUTO/80/100/200/400	Terminal	AV OUT/DIGITAL: Dedicated jack (8 pin) DC IN: type 3 jack
Shutter speed	8 - 1/2,000th Motion image mode: 1/30th - 1/2,000th	Power source	DC 8.4V
White balance	AUTO/Daylight/Cloudy/Halogen/Flash/White set	Power Consumption	2.1W (When recording with LCD Monitor) 2.0W (When recording with Viewfinder) 1.2W (When playing back with LCD Monitor) 1.1W (When playing back with Viewfinder)
Exposure (AE)	Program AE (P)/Aperture-priority AE (A)/ Shutter-priority AE (S)/Manual exposure (M) Exposure compensation (1/3 EV step, -2 - +2 EV)	Dimensions (W×H×D)	4 1/4"×2 11/16"×3 11/32"/108×68.4×84.8 mm (excluding the projection part)
Metering mode	Multiple/Center weighted/Spot	Weight	Approx. 10.2 oz/290 g (excluding Memory Card and battery) Approx. 11.5 oz/326 g (with Memory Card and battery)
LCD monitor	1.8" low-temperature polycrystalline TFT LCD (130,000 pixels) (field of view ratio about 100%)	Operating Temperature	32°F - 104°F (0°C - 40°C)
Viewfinder	Color electrical Viewfinder (114,000 pixels) (field of view ratio about 100%) (with diopter adjustment -4 - +4 diopter)	Operating Humidity	10% - 80%
		Solder	This model uses lead free solder (PbF).

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 INTRODUCTION

1.1. INTRODUCTION

This service manual contains technical information, which allow service personnel's to understand and service this model.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, the information will be followed by service manual to be controlled with original service manual.

1.2. ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:

- Pb free solder has a higher melting point than standard solder, Typically the melting point is 50-70°F (30-40°C) higher.
Please use a high temperature soldering iron. In case of soldering iron with temperature control, please set it to 700±20°F (370±10°C)
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

1.3. IMPORTANT NOTICE 1: (Other than U.S.A. and Canadian Market)

1. The service manual does not contain the following information, because of the impossibility of servicing at component level.
 - a. Schematic diagram, Block Diagram and C.B.A. layout of Main C.B.A.
 - b. Parts list for individual parts of Main C.B.A.

When a part replacement is required for repairing Main C.B.A., replace as an assembled parts. (Main C.B.A.)

2. The following category is/are recycle module part. please send it/them to Central Repair Center.
 - MAIN C.B.A. (VEP56020A) : Excluding replacement of Lithium Battery

1.4. HOW TO DEFINE THE MODEL SUFFIX (NTSC or PAL model)

There are seven kinds of DMC-FZ5, regardless the colours.

- a) DMC-FZ5S
- b) DMC-FZ5PP
- c) DMC-FZ5EB/EG/EGM/GN
- d) DMC-FZ5GC/SG
- e) DMC-FZ5GD
- f) DMC-FZ5GT
- g) DMC-FZ5PL/GK

(DMC-FZ5S is exclusively Japan domestic model.)

What is the difference is that the "INITIAL SETTING" data which is stored in Flash ROM mounted on Main C.B.A.

1.4.1. Defining methods:

To define the model suffix to be serviced, refer to the name plate which is putted on the bottom side of the Unit.

a) DMC-FZ5S

DMC-FZ5S is exclusively Japan domestic model.

b) DMC-FZ5PP

The name plate for this model show the following Safty registration mark.



c) DMC-FZ5EB/EG/EGM/GN

The name plate for these models show the following Safty registration mark.



d) DMC-FZ5GC/SG

The name plate for these models show the following Safty registration mark.



e) DMC-FZ5GD

The name plate for this model show the following Safty registration mark.



f) DMC-FZ5GT

The name plate for this model show the following Safty registration mark.



g) DMC-FZ5PL/GK

The name plate for these models do not show any above Safty registration mark.



NOTE:

After replacing the MAIN C.B.A., be sure to achieve adjustment.

The adjustment instruction is available at "software download" on the "Support Information from NWBG-PAVC" web-site in "TSN system", together with Maintenance software.

1.4.2. INITIAL SETTINGS:

When you replace the Main C.B.A. be sure to perform the initial settings after achieving the Adjustment, by ordering the following procedure in accordance with model suffix.

• Step 1. The temporary cancellation of factory setting:

Set the mode dial to “ [P] ”.

While keep pressing [Optical Image Sttabilizer] and “ [UP] of Cross key” simultaneously, turn the Power on.

• Step 2. The cancellation of factory setting:

Set the mode dial to “ [Playback] ”.

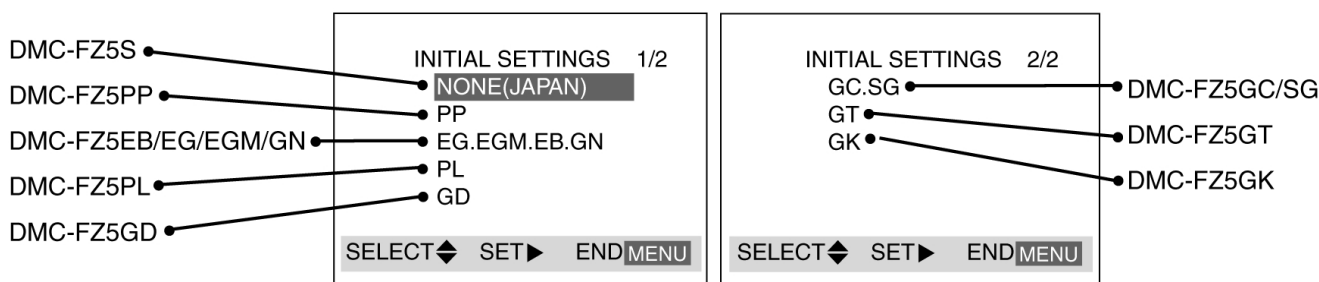
While keep pressing [Optical Image Sttabilizer] and “ [UP] of Cross key” simultaneously, turn the Power off.

• Step 3. Turn the Power on:

Set the mode dial to “ [P] ”, and then turn the Power on.

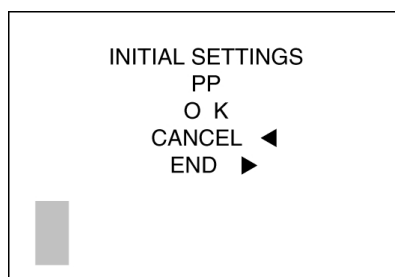
• Step 4. Display the INITIAL SETTING:

While keep pressing [MENU] and “ [RIGHT] of Cross key” simultaneously, turn the Power off.



• Step 5. Set the INITIAL SETTING:

Select the area with pressing “ [UP] / [DOWN] of Cross key”, and then press the “ [RIGHT] of Cross key”.



The only set area is displayed, and then press the “ [RIGHT] of Cross key” after confirmation. (The unit is powered off automatically.)

Confirm the display of “PLEASE SET THE CLOCK” in English when the unit is turned on again.

• Step 6. CONFIRMATION:

The display shows “PLEASE SET THE CLOCK” when turn the Power on again.

Connect the unit to PC with USB cable and is detected as removable media.

(For China and Taiwan marker, the display shows “PLEASE SET THE CLOCK” in Chinese.)

1) As for your reference Default setting condition is given in the following table.

• Default setting (After “INITIAL SETTINGS”)

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DMC-FZ5S	NTSC	Japanese	Year/Month/Date	
b)	DMC-FZ5PP/PL	NTSC	English	Month/Date/Year	
c)	DMC-FZ5EB/EG/EGM/GC/GN/SG	PAL	English	Date/Month/Year	
d)	DMC-FZ5GK	PAL	Chinese (simplified)	Year/Month/Date	
e)	DMC-FZ5GT	NTSC	Chinese (traditional)	Year/Month/Date	
f)	DMC-FZ5GD	NTSC	English	Year/Month/Date	

2 SAFETY PRECAUTIONS

2.1. GENERAL GUIDELINES

1. IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by \triangle in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.2. LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 M Ω and 5.2 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.

2.3. LEAKAGE CURRENT HOT CHECK (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with 1 k Ω /V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Hot-Check Circuit

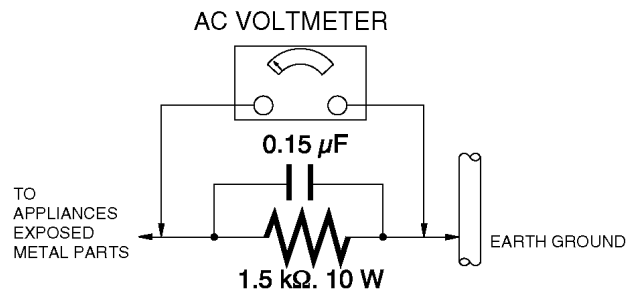


Figure. 1

3 PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION :

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

4 HOW TO RECYCLE THE LITHIUM ION BATTERY (U.S. ONLY)

ENGLISH



A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

FRANÇAIS



L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion/polymère recyclable. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

5 CAUTION FOR AC CORD (For EB/GC/SG)

5.1. INFORMATION FOR YOUR SAFETY

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

5.2. CAUTION FOR AC MAINS LEAD

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362

Check for the ASRA mark or the BSI mark on the body of the fuse.



If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safely.

There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt, please consult a qualified electrician.

5.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

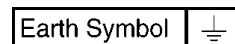
Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

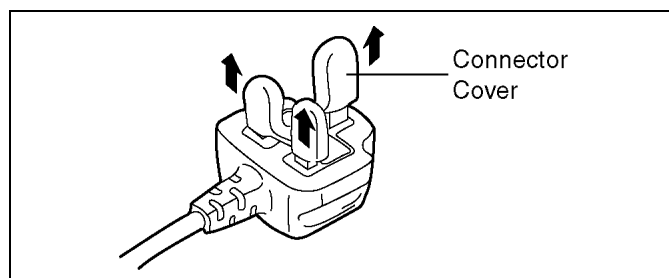
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.



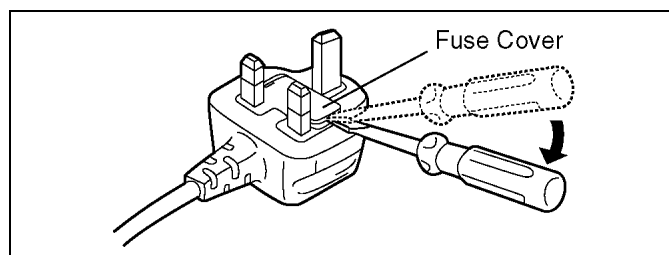
5.2.2. Before use

Remove the Connector Cover as follows.

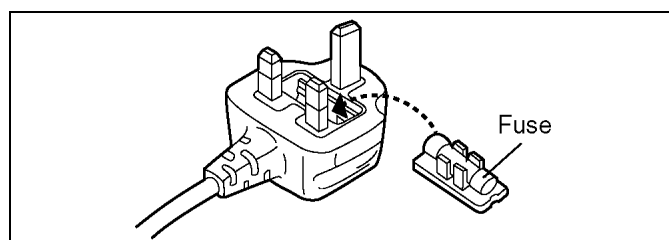


5.2.3. How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



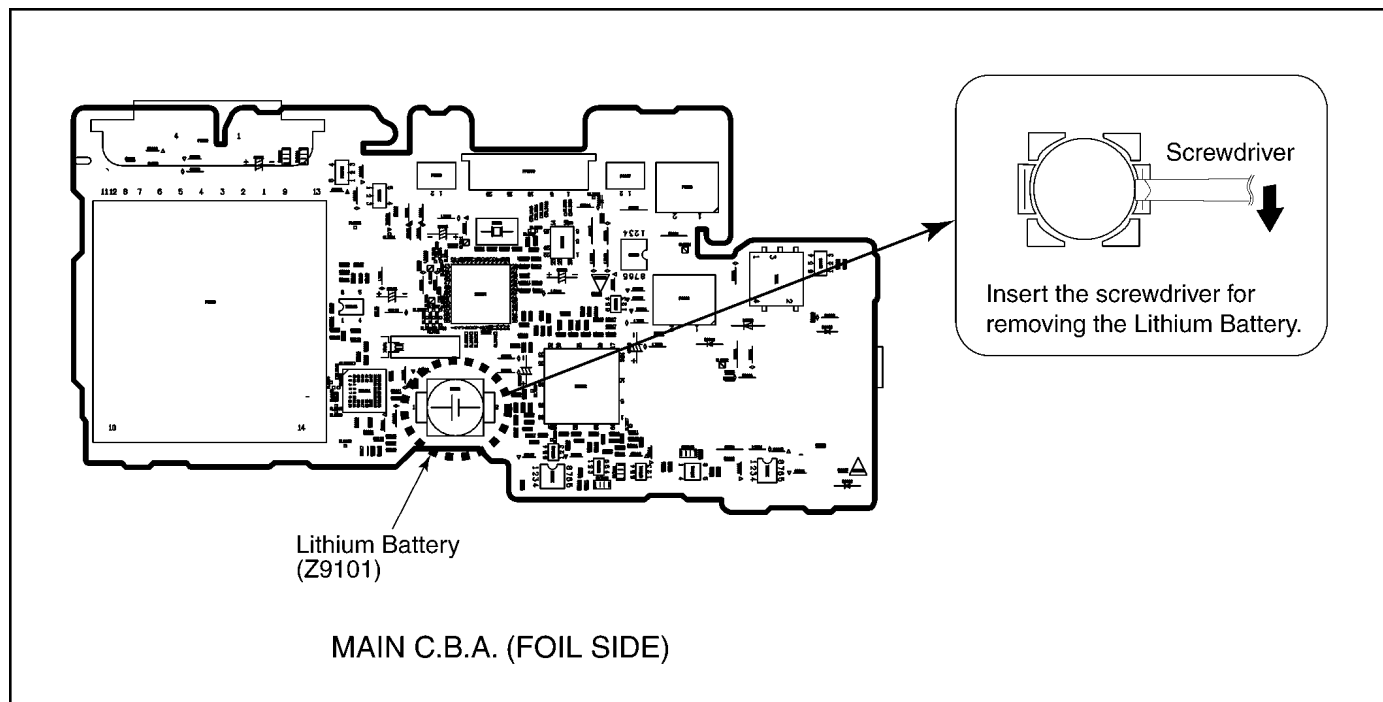
2. Replace the fuse and attach the Fuse cover.



6 HOW TO REPLACE THE LITHIUM BATTERY

6.1. REPLACEMENT PROCEDURE

1. Remove the MAIN C.B.A. (Refer to Disassembly Procedures.)
2. Remove the Lithium battery (Ref. No. "Z9101" at foil side of MAIN C.B.A.) and then replace it into new one.



NOTE:

This Lithium battery is a critical component.

(Type No.: ML-614S/ZT **Manufactured by Matsushita Battery Industrial Co.,Ltd.**)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in requirement designed specifically for its use.

Replacement batteries must be of same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

(For English)**CAUTION**

Danger of explosion if battery is incorrectly replaced.
 Replace only with the same or equivalent type recommended by the manufacturer.
 Dispose of used batteries according to the manufacturer's instructions.

(For French)**PRECAUTION**

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
 Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

(For German)**VORSICHT**

Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom Hersteller empfohlenen Batterie vom gleichen Typ ersetzen.
 Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern.

(For Swedish)**VARNING**

Explosionsfara vid felaktigt batteribyte.
 Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattilverkaren.
 Kassera använt batteri enligt fabrikantens instruktion.

(For Norwegian)**ADVARSEL!**

Lithiumbatteri-Eksplosionsfare ved feilagtig håndtering.
 Udsiftning må kun ske med batteri af samme fabrikat og type.
 Levér det brugte batteri tilbage til leverandøren.

(For Finnish)**VAROITUS**

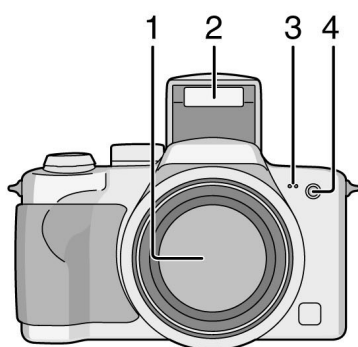
Paristo voi räjähtää, jos se on virheellisesti asennettu.
 Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
 Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

NOTE:

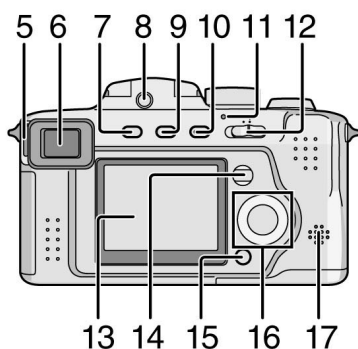
Above caution is applicable for a battery pack which is for DMC-FZ5 series, as well.

7 OPERATING GUIDE

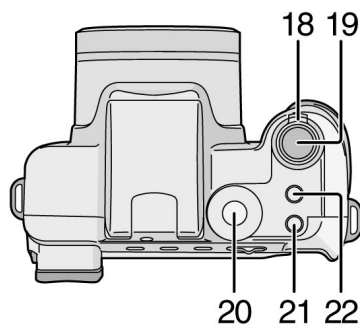
Names of the Components



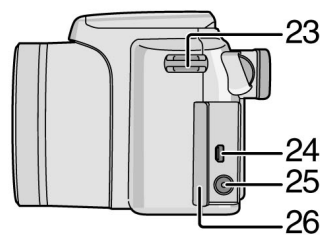
- 1 Lens
- 2 Flash
- 3 Microphone
- 4 Self-timer Indicator
AF Assist Lamp



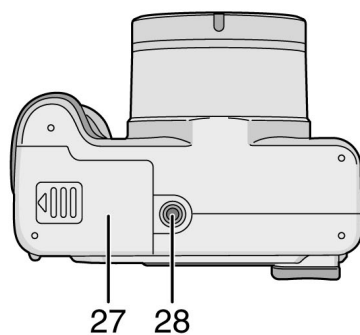
- 5 Diopter Adjustment Dial
- 6 Viewfinder
- 7 [EVF/LCD] Button
- 8 Flash Open Button
- 9 [DISPLAY] Button
- 10 [EXPOSURE] Button
- 11 Power Indicator
- 12 Camera ON/OFF Switch
- 13 LCD Monitor
Size 1.8"
- 14 [MENU] Button
- 15 Delete/[FOCUS] Button
- 16 Cursor Buttons
 - ◀/Self-timer Button
 - ▼/[REVIEW] Button
 - ▶/Flash Setting Button
 - ▲/Exposure Compensation /Auto
Bracket/White Balance Fine
Adjustment /Flash Output
Adjustment /Backlight
Compensation in Simple Mode
Button
- 17 Speaker



- 18 Zoom Lever
- 19 Shutter Button
- 20 Mode Dial
- 21 Single or Burst Mode Button
- 22 Optical Image Stabilizer Button



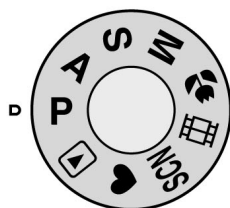
- 23 Strap Eyelet
- 24 [AV OUT/DIGITAL] Socket
- 25 [DC IN] Socket
 - Please be sure to use genuine Panasonic AC adaptor (DMW-CAC1; optional).
- 26 Terminal Door



- 27 Card/Battery Door
- 28 Tripod Receptacle

■ The Mode Dial

This camera has a mode dial to suit recording of many kinds of scenes. Select the desired mode and enjoy the variety of recording. Rotate the mode dial slowly and securely.



P : Program AE mode

The exposure is automatically adjusted by the camera.

A : Aperture-priority AE

The shutter speed is automatically determined by the aperture value you set.

S : Shutter-priority AE

The aperture value is automatically determined by the shutter speed you set.

M : Manual exposure

The exposure is adjusted by the aperture value and the shutter speed which are manually adjusted.

🌸 : Macro mode

This mode allows you to take a picture closely focusing on the subject.

🎞️ : Motion image mode

This mode allows you to record motion images.

SCN : Scene mode

This mode allows you to take pictures depending on the recording scenes.

♥ : Simple mode

This is the recommended mode for beginners.

▶ : Playback mode

This mode allows you to play back recorded pictures.

8 SERVICE NOTES

8.1. WHEN REPLACING THE MAIN C.B.A.

After replacing the MAIN C.B.A., be sure to achieve adjustment.

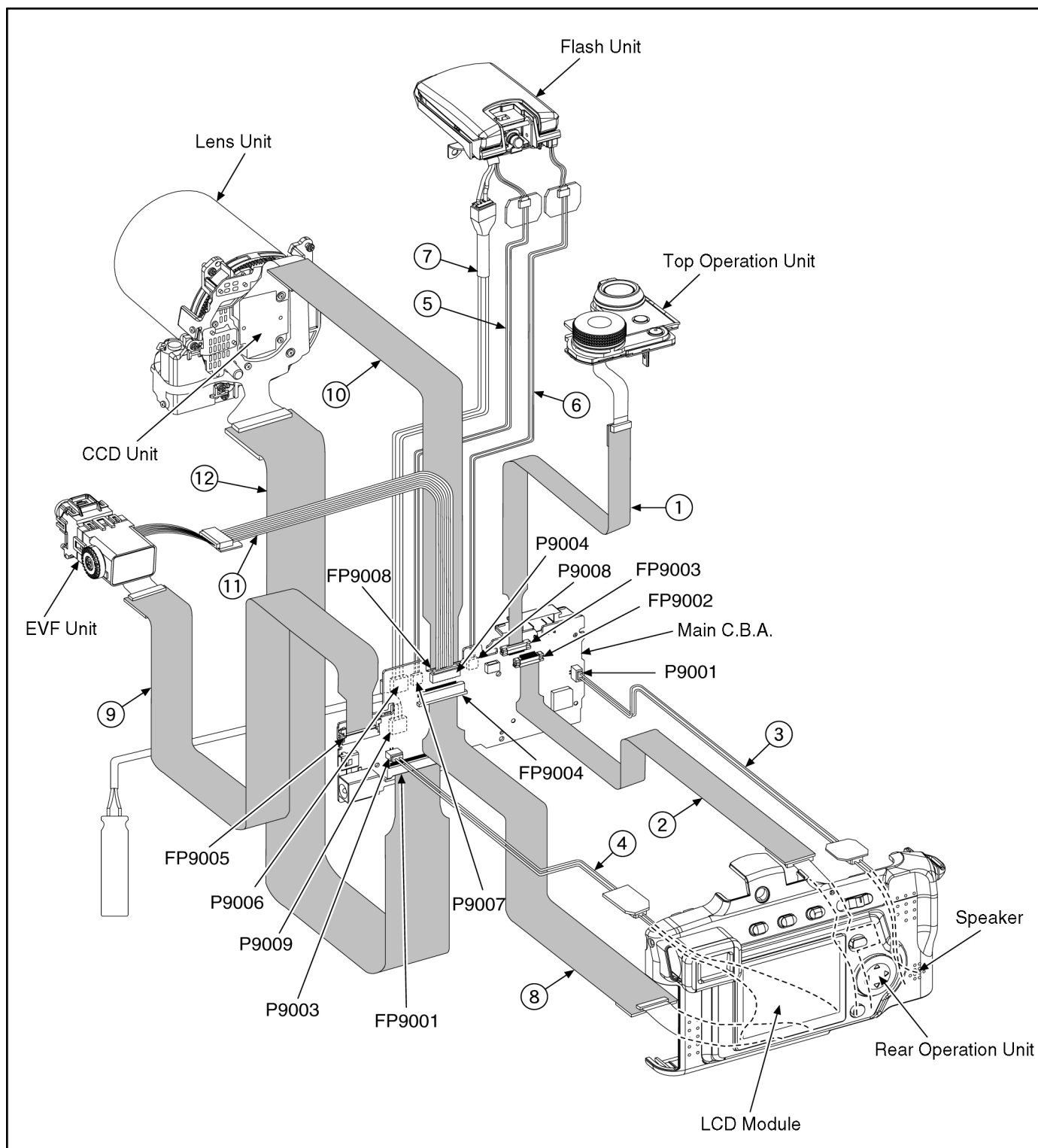
The adjustment instruction is available at “software download” on the “Support Information from NWBG-PAVC” web-site in “TSN system”, together with Maintenance software.

8.2. SERVICE POSITION

This Service Position is used for checking and replacing parts. Use the following Extension cables for servicing.

Table S1 Extension Cable List

No.	Parts No.	Connection	Form
1	VFK1582A1225	FP9003 (MAIN) - TOP OPERATION UNIT	12PIN 0.5 FFC
2		FP9002 (MAIN) - REAR OPERATION UNIT	12PIN 0.5 FFC
3	VFK1576DC202	P9001 (MAIN) - SPEAKER	2PIN CABLE
4		P9003 (MAIN) - LCD BACKLIGHT	2PIN CABLE
5		P9007 (MAIN) - FLASH UNIT	2PIN CABLE
6		P9008 (MAIN) - FLASH UNIT	2PIN CABLE
7	VFK1576DSC03	P9006 (MAIN) - FLASH UNIT	2PIN CABLE
8	VFK1284	FP9004 (MAIN) - LCD MODULE	24PIN 0.5 FFC
9	VFK1282	FP9005 (MAIN) - EVF UNIT	22PIN 0.5 FFC
10	VFK1461	FP9008 (MAIN) - CCD UNIT	20PIN 0.5 FFC
11	VFK1920	P9004 (MAIN) - EVF UNIT	8PIN CABLE
12	VFK1953	FP9001 (MAIN) - LENS UNIT	40PIN 0.5 FFC



CAUTION-1. (When servicing MAIN C.B.A.)

1. Be sure to discharge the capacitor unit.

Refer to "HOW TO DISCHARGE THE CAPACITOR UNIT".

The capacitor voltage is not lowered soon even if the AC Cord is unplugged or the battery is removed.

2. Be careful of the high voltage circuit on MAIN C.B.A.

3. DO NOT allow other parts to touch the high voltage circuit on MAIN C.B.A.

8.3. HOW TO DISCHARGE THE CAPACITOR UNIT

CAUTION:

1. Be sure to discharge the capacitor unit.
2. Be careful of the high voltage circuit on MAIN C.B.A. when servicing.

[Discharging Procedure]

1. Refer to the disassemble procedure and Remove the necessary parts/unit.
2. Put the insulation tube on the lead part of Resistor (ERG5SJ102:1k Ω /5W).
(an equivalent type of resistor may be used.)
3. Put the resistor between both terminals of capacitor unit (P9009) for approx. 5 seconds.
4. After discharging confirm that the capacitor voltage is lower than 10V using a voltmeter.

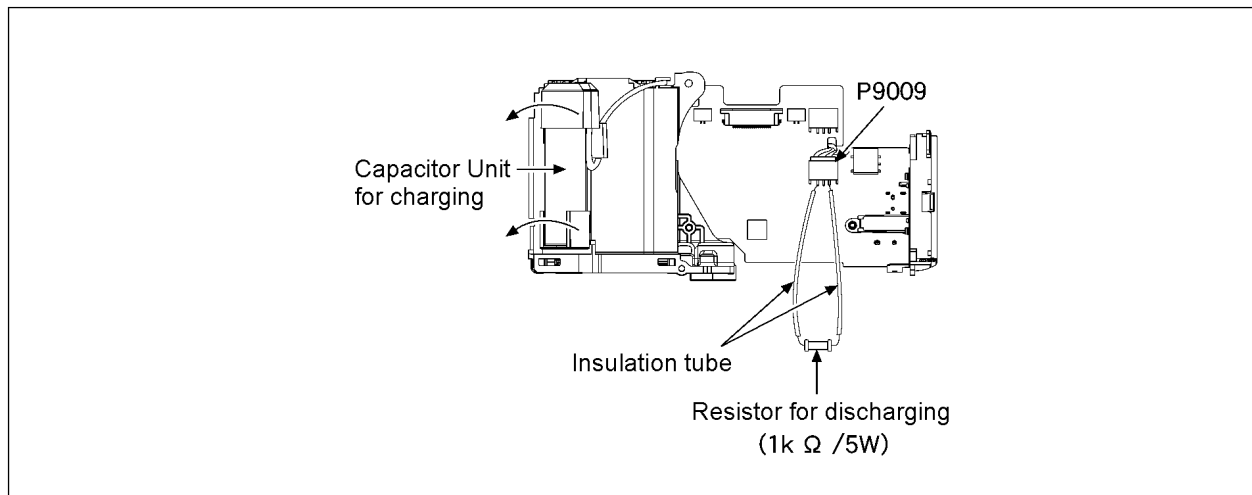


Fig. F1

8.4. CLEANING LENS, VIEWFINDER AND LCD PANEL

Do not touch the surface of lens, viewfinder and LCD Panel with your hand.

When cleaning the lens, use air-Blower to blow off the dust.

When cleaning the viewfinder and LCD Panel, dampen the lens cleaning paper with lens cleaner, and the gently wipe the their surface.

Note:

A lens cleaning paper and lens cleaner are available at local camera shops and market place.

8.5. NOTE FOR SCHEMATIC DIAGRAM

[Circuit voltage and waveform]

Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

9 ADJUSTMENT PROCEDURES

Although the repair of Main C.B.A. is separated, it needs the electrical adjustment and factory setting when it is replaced the Main C.B.A., IC6002 (Flash-ROM) and related parts.

The electrical adjustment in this unit is separated two types as shown below.

(Concerning to the adjustment conditions and procedures, please use the "Adjustment Manual" contained in "View 3" on the web-site.

1. Main unit adjustment: All adjustments except for LCD and EVF adjustments.

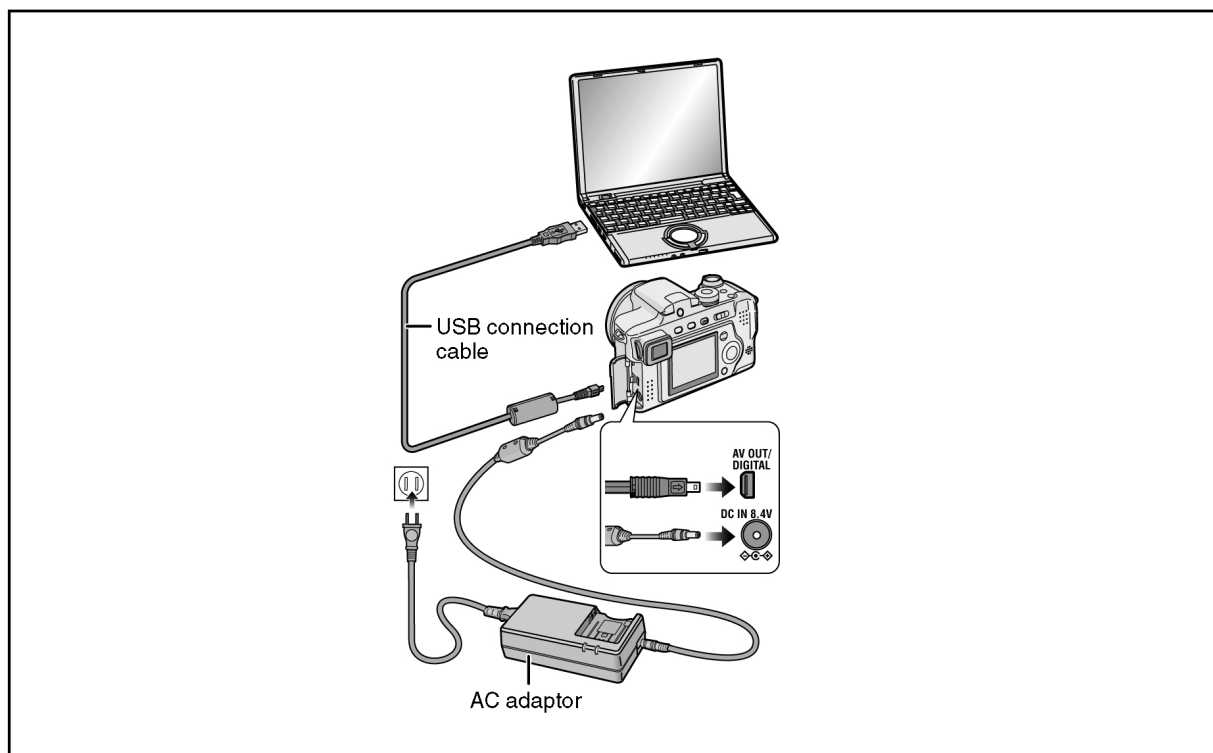
This unit mounts the adjustment software for main unit, it wouldn't need the connection between the PC and this unit with USB cable.

2. LCD and EVF adjustment: Adjustments for LCD and EVF.

It need the connection between the PC and this unit with USB cable.

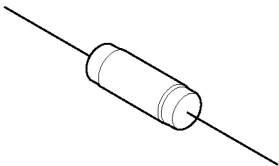
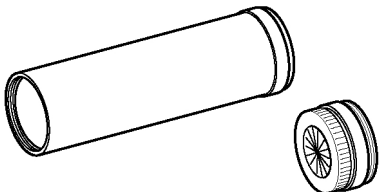
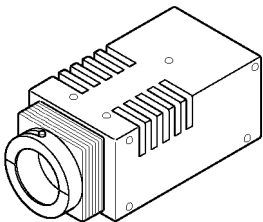
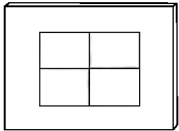

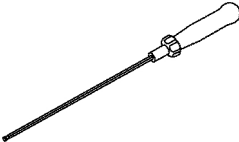


(This adjustments needs the adjustment software contained in "View 3".

The connection is shown to the figure below.



9.1. SERVICE FIXTURE AND TOOLS

The following Service Fixture and tools are used for checking and servicing this unit.

Resistor for Discharging ERG5SJ102	Infinity Lens (with Focus Chart) VFK1164TCM02	LIGHT BOX VFK1164TDVLB
 <p>An equivalent type of Resistor may be used.</p>		 <p>※ with DC Cable</p>
TR Chart VFK1949	Lens Cleaning Kit (BK) VFK1900BK	Ball point driver VFK1929
	 <p>* Only supplied as 10 set/box.</p>	
Grease (for lens) VFK1829	Furoyl grease (for focus motor) VFK1850	
		

10 ERROR CODE MEMORY FUNCTION

1. General description

This unit is equipped with history of error code memory function, and can be memorized 32 error codes in sequence from the latest. When the error is occurred more than 32, oldest error is overwritten in sequence.

The error code is not memorized when the power supply is shut down forcibly (when the unit is powered on by the battery, the battery is pulled out) because the error code is memorized to FLASH ROM when the unit is powered off.

2. How to display

The error code can be displayed by the following procedure:

Before perform the error code memory function, connect the AC adaptor or insert the battery, and insert the SD card.

• 1. The temporary cancellation of factory setting:

Set the mode dial to "P".

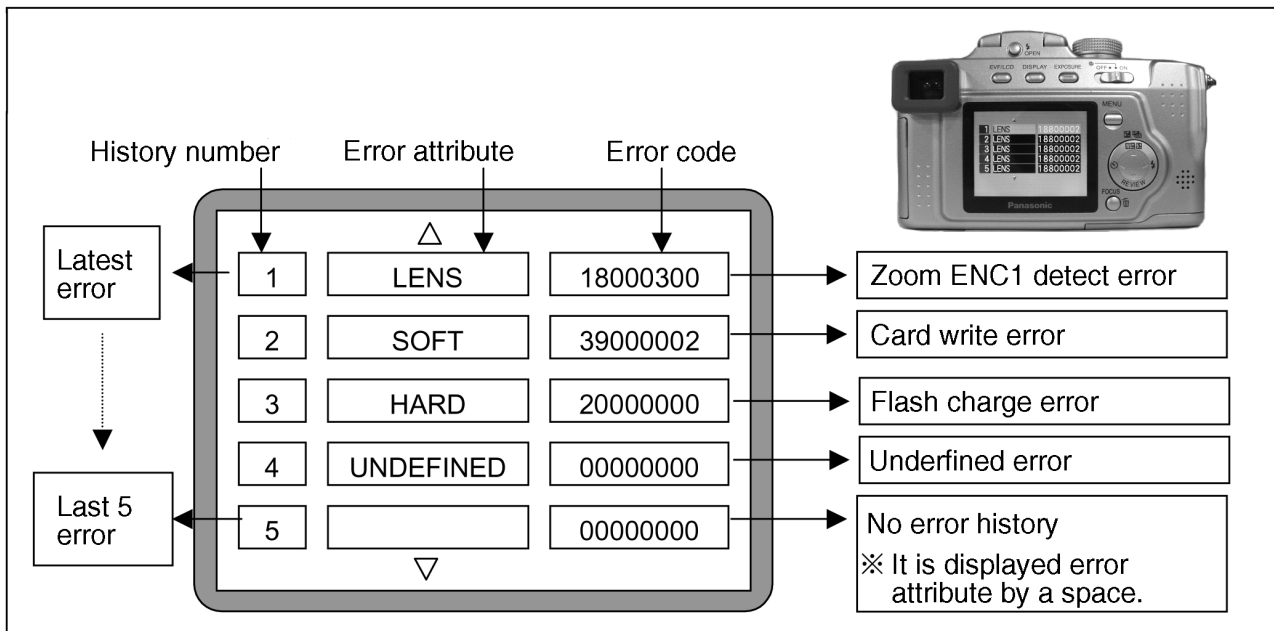
While pressing **[Optical Image Stabilizer]** and "**[UP]** of Cross key" simultaneously and hold them, turn the Power on.

• 2. The display of error code:

Press **[Optical Image Stabilizer]**, **[MENU]** and "**[LEFT]** of Cross key" simultaneously with the step 1 condition.

The display is changed as shown below when the above buttons is pressed simultaneously.

Normal display → Error code display → Operation history display → Normal display →



Example of Error Code Display

• 3. The change of display:

The error code can be memorized 32 error codes in sequence, however it is displayed 5 errors on the LCD.

Display can be changed by the following procedure:

"**[UP]** or **[DOWN]** of Cross key": It can be scroll up or down one.

"**[LEFT]** or **[RIGHT]** of Cross key": It can be display last 5 error or another 5 error.

• 4. How to read the error code:

One error code is displayed for 8 bit, the contents of error codes is indicated the table as shown below.

History number Error attribute Error code

History number	Error attribute	Error code
1	LENS	18000300
2	SOFT	39000002
3	HARD	20000000
4	UNDEFINED	00000000
5		00000000

Attribute	Main item	Sub item	Error code		Contents (Upper)	
			High 4 bits	Low 4 bits	Check point (Lower)	
LENS	Lens drive	OIS	1800	1000	PSD (X) error. Hall element (X axis) position detect error in OIS unit. OIS Unit	
				2000	PSD (Y) error. Hall element (Y axis) position detect error in OIS unit. OIS Unit	
				3000	GYRO (X) error. Gyro (IC7101: X axis) detect error on Main C.B.A.. IC7101 (Gyro element) or IC6001 (VENUS2)	
				4000	GYRO (Y) error. Gyro (IC7102: Y axis) detect error on Main C.B.A.. IC7102 (Gyro element) or IC6001 (VENUS2)	
				5000	MREF error (Reference voltage error). IC7002 (LENS drive) or IC6001 (VENUS2)	
				6000	Drive voltage (X) error. VENUS2 AD value error, LENS Unit, LENS flex breaks etc.	
				7000	Drive voltage (Y) error. VENUS2 AD value error, LENS Unit, LENS flex breaks etc.	
				C.B./Zoom	0100	HP Low detect error (C.B. encoder <full retract> always Low detect). FP9001-(5) signal line or IC6001 (VENUS2)
					0200	HP High detect error (C.B. encoder <full retract> always High detect). FP9001-(5) signal line or IC6001 (VENUS2)
					0300	ENC1 detect error (C.B. motor encoder detect error). FP9001-(36) signal line or IC6001 (VENUS2)
					0400	ENC2 detect error (C.B. motor encoder detect error). FP9001-(39) signal line or IC6001 (VENUS2)
				Zoom	0010	HP Low detect error (Zoom encoder always Low detect error). FP9001-(36, 39) signal line or IC6001 (VENUS2)
					0020	HP High detect error (Zoom encoder always High detect error). FP9001-(36, 39) signal line or IC6001 (VENUS2)
					0030	ENC1 detect error (Zoom encoder detect error). FP9001-(36) signal line or IC6001 (VENUS2)
		0040	ENC2 detect error (Zoom encoder detect error). FP9001-(39) signal line or IC6001 (VENUS2)			
		Focus	0001	HP Low detect error (Focus encoder always Low detect error). FP9001-(17) signal line or IC6001 (VENUS2)		
			0002	HP High detect error (Focus encoder always High detect error). FP9001-(17) signal line or IC6001 (VENUS2)		
		Lens	1801	0000	Power ON time out error. Lens drive system	
			1802	0000	Power OFF time out error. Lens drive system	
		Adj.History	OIS	1900	2000	OIS adj. Yaw direction amplitude error (small)
					3000	OIS adj. Pit direction amplitude error (small)
					4000	OIS adj. Yaw direction amplitude error (large)
					5000	OIS adj. Pit direction amplitude error (large)
					6000	OIS adj. MREF error
					7000	OIS adj. time out error
					8000	OIS adj. Yaw direction off set error
					9000	OIS adj. Pit direction off set error
					A000	OIS adj. Yaw direction gain error
	B000				OIS adj. Pit direction gain error	
	C000				OIS adj. Yaw direction position sensor error	
	D000				OIS adj. Pit direction position sensor error	
	E000				OIS adj. other error	
HARD	VENUS A/D				Flash	2000
	FLASH ROM (EEPROM Area)	FLASH ROM (EEPROM Area)	2B00	0001	EEPROM read error IC6002 (FLASH ROM)	
				0002	EEPROM write error IC6002 (FLASH ROM)	
	SYSTEM	RTC	2C00	0001	SYSTEM IC initialize failure error Communication between IC6001 (VENUS2) and IC9101 (SYSTEM)	

Attribute	Main item	Sub item	Error code		Contents (Upper)
			High 4 bits	Low 4 bits	Check point (Lower)
SOFT	CPU	Reset	3000	0001	NMI reset
					Non Mask-able Interrupt
	Card	Card	3100	0007	(30000001-30000007 are caused by factors)
				0001	Card logic error
					SD card data line or IC6001 (VENUS2)
				0002	Card physical error
					SD card data line or IC6001 (VENUS2)
				0003	Read error
					SD card data line or IC6001 (VENUS2)
				0004	Write error
	CPU, ASIC hard	Stop	3800		SD card data line or IC6001 (VENUS2)
				0005	Format error
					SD card data line or IC6001 (VENUS2)
				0001	Camera task finish process time out.
					Communication between Lens system and IC6001 (VENUS2)
				0002	Camera task invalid code error.
				IC6001 (VENUS2)	
0100				File time out error in recording motion image	
				IC6001 (VENUS2)	
			0002	File data send error in recording motion image	
				IC6001 (VENUS2)	
			1000	AF frame movement check time out.	
Memory	Built-in memory	3900	0005	IC6001 (VENUS2)	
				Built-in memory format error	
				FLASH ROM data line or IC6001 (VENUS2)	

· **5. How to returned to Normal Display:**

Turn the power off and on, to exit from Error code display mode.

NOTE:

The error code can not be initialized by the unit only.

11 CONFIRMATION OF FIRMWARE VERSION

The Firmware version can be confirmed by ordering the following steps:.

• Step 1. The temporary cancellation of factory setting:

Set the mode dial to “P”.

While keep pressing **Optical Image Stabilizer** and “UP” of Cross key” simultaneously. turn the power on with inserting the SD memory card which has a few photo data.

• Step 2. Confirm the version:

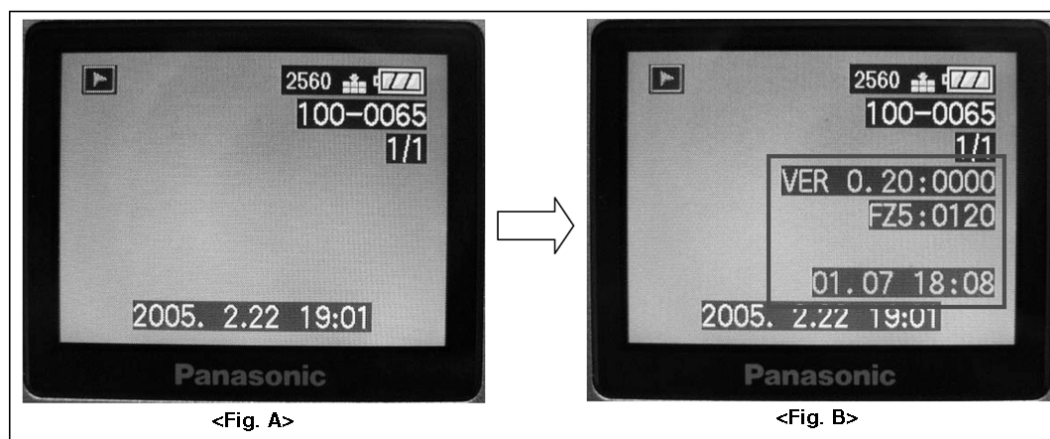
1. Set the mode dial to “Playback” and then press **DISPLAY** to switch to LCD with indication. <Fig. A>
2. Press **Optical Image Stabilizer** and “DOWN” of Cross key” simultaneously. (No need to keep pressing.)
(The version information is displayed on the LCD with light blue colour letters.) <Fig. B>

CAUTION:

The version information does not display if the LCD has switched to LCD with indication already.

In this case, press **DISPLAY** to switch to LCD with indication.

VER 0. 20:0000	← (1) Firmware version: EEPROM version.....The information of IC6002 (Flash-ROM)
FZ5:0120	← (2) Model: Local version.....Managed information in factory
01. 07 18:08	← (3) Issued date of firmware development

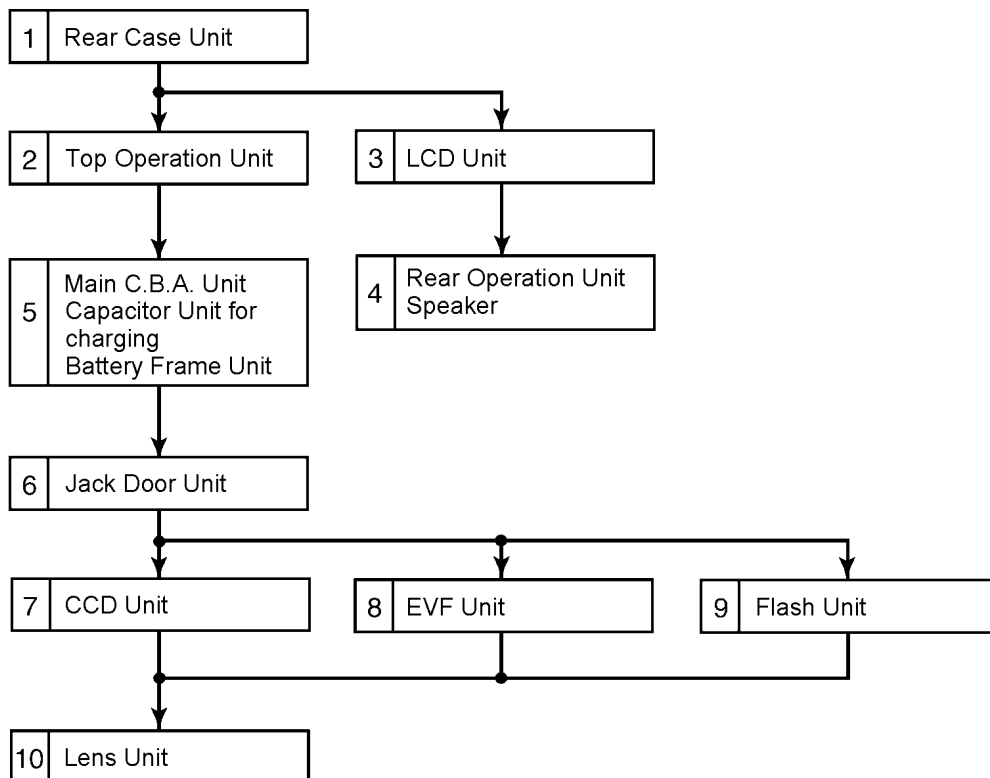


<Point>

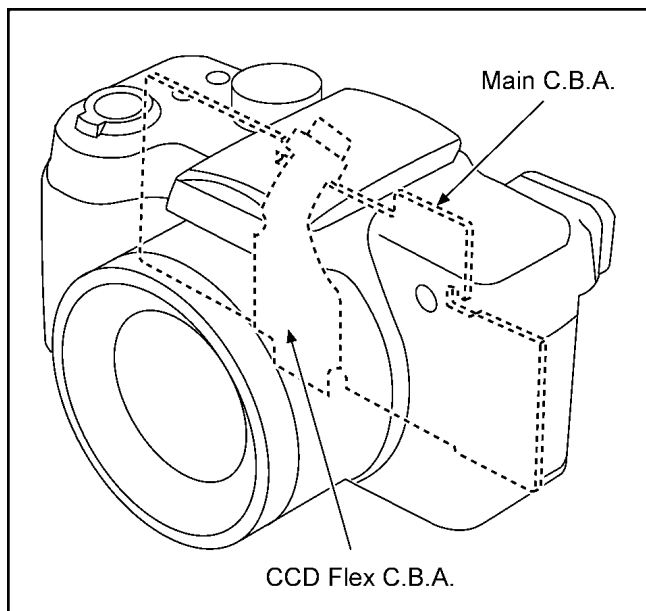
- The firmware version and EEPROM version can be confirmed with the information (1).
- The information (2), (3) are just reference.

12 DISASSEMBLY PROCEDURE

12.1. DISASSEMBLY FLOW CHART



12.2. C.B.A. LOCATION



12.3. DIASSEMBLY PROCEDURE

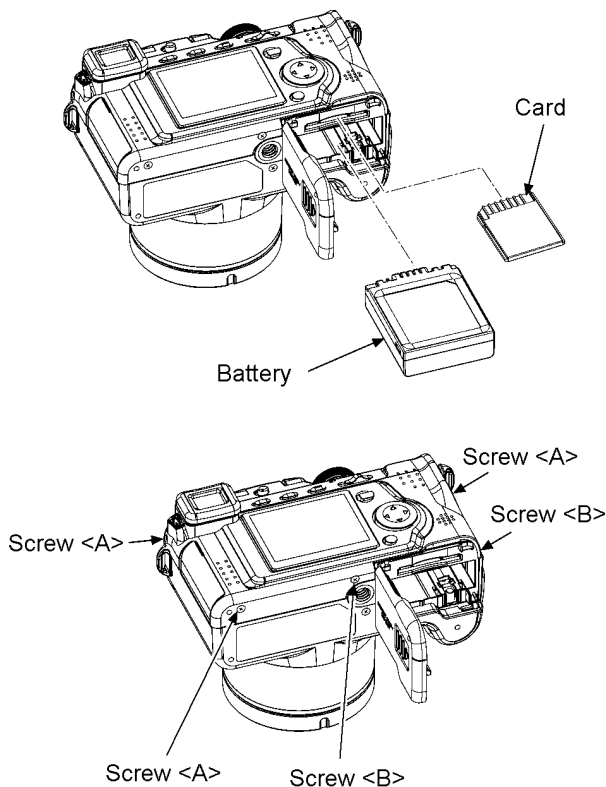
No.	Item	Fig	Removal
1	Rear Case Unit	Fig. D1	Card
			Battery
			3 Screws <A>
			2 Screws
			1 Hexagonal screw <C>
		Fig. D2	P9001(Connector)
			P9003(Connector)
			FP9002(Flex)
			FP9004(Flex)
			Rear Case Unit
2	Top Operation Unit	Fig. D3	FP9003(Flex)
			1 Screw <D>
			Top Operation Unit
3	LCD Unit	Fig. D4	1 Screw <E>
			3 Locking tabs
			LCD Holder
			LCD Unit
4	Rear Operation Unit Speaker	Fig. D5	3 Screws <F>
			Rear Operation Unit
			Speaker
5	Main C.B.A. Unit Capacitor Unit for charging Battery Frame Unit	Fig. D6	P9004(Connector)
			P9006(Connector)
			P9007(Connector)
			P9008(Connector)
			P9009(Connector)
			FP9001(Flex)
			FP9005(Flex)
			FP9008(Flex)
			1 Screw <G>
			Capacitor Unit for charging
		Fig. D7	2 Screws <H>
			3 Locking tabs
			Main C.B.A. Unit
			Battery Frame Unit
6	Jack Door Unit	Fig. D8	1 Screw <I>
			Jack Door Unit
7	CCD Unit	Fig. D9	3 Screws <J>
			CCD Unit
8	EVF Unit	Fig. D10	1 Screw <K>
			EVF Unit
9	Flash Unit	Fig. D11	1 Screw <L>
			Flash Unit
10	Lens Unit	Fig. D12	1 Screw <M>
			Lens Unit

12.3.1. Removal of the Rear Case Unit

NOTE:

When servicing and reassembling, remove the card and battery from the unit.

- Card
- Battery
- Screw <A> × 3
- Screw × 2
- Hexagonal screw <C> × 1



NOTE: (When Removing Hexagonal screw <C>)

Use Ball point driver (VFK1929).

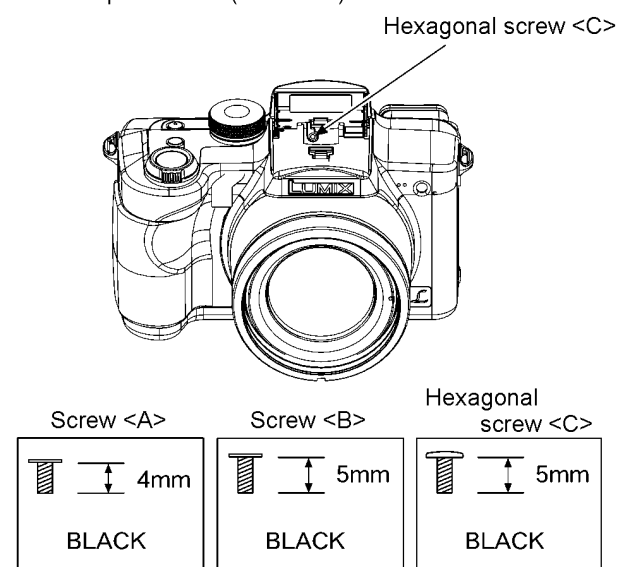


Fig. D1

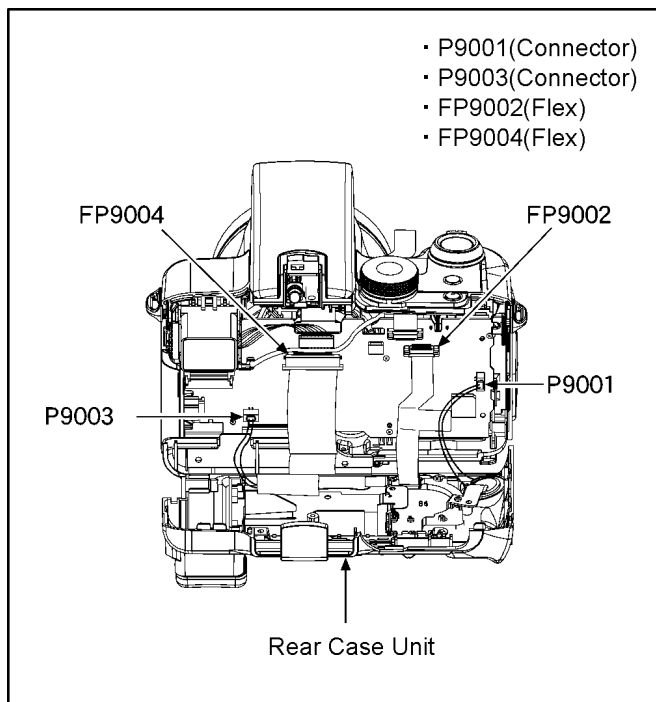


Fig. D2

12.3.2. Removal of the Top Operation Unit

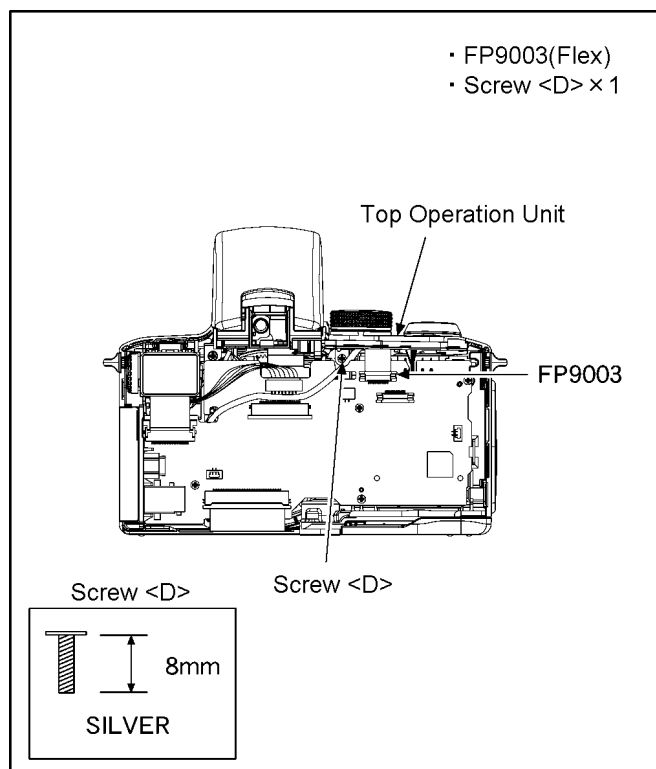


Fig. D3

12.3.3. Removal of the LCD Unit

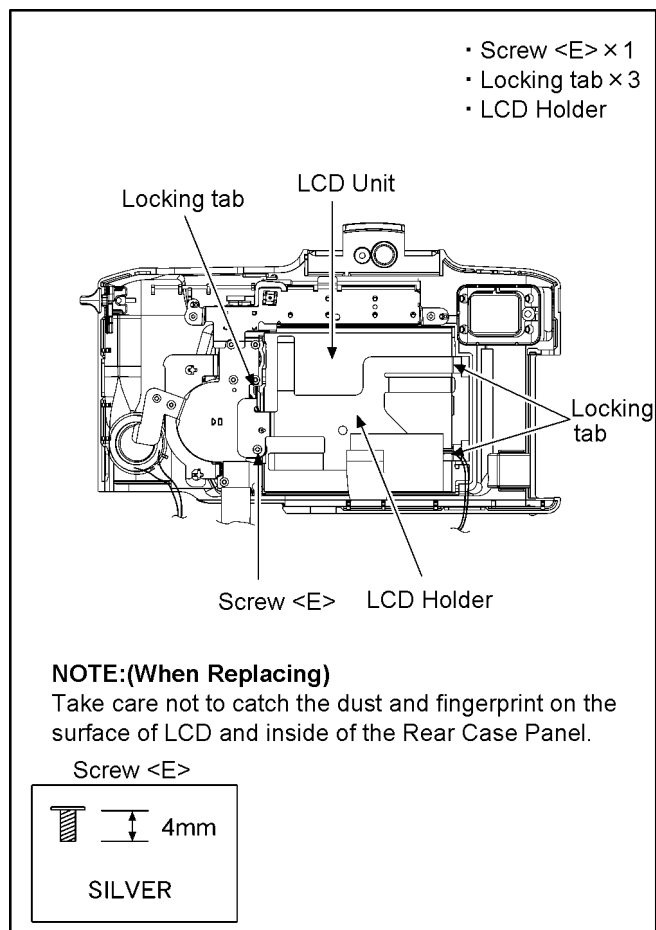


Fig. D4

12.3.4. Removal of the Rear Operation Unit and Speaker

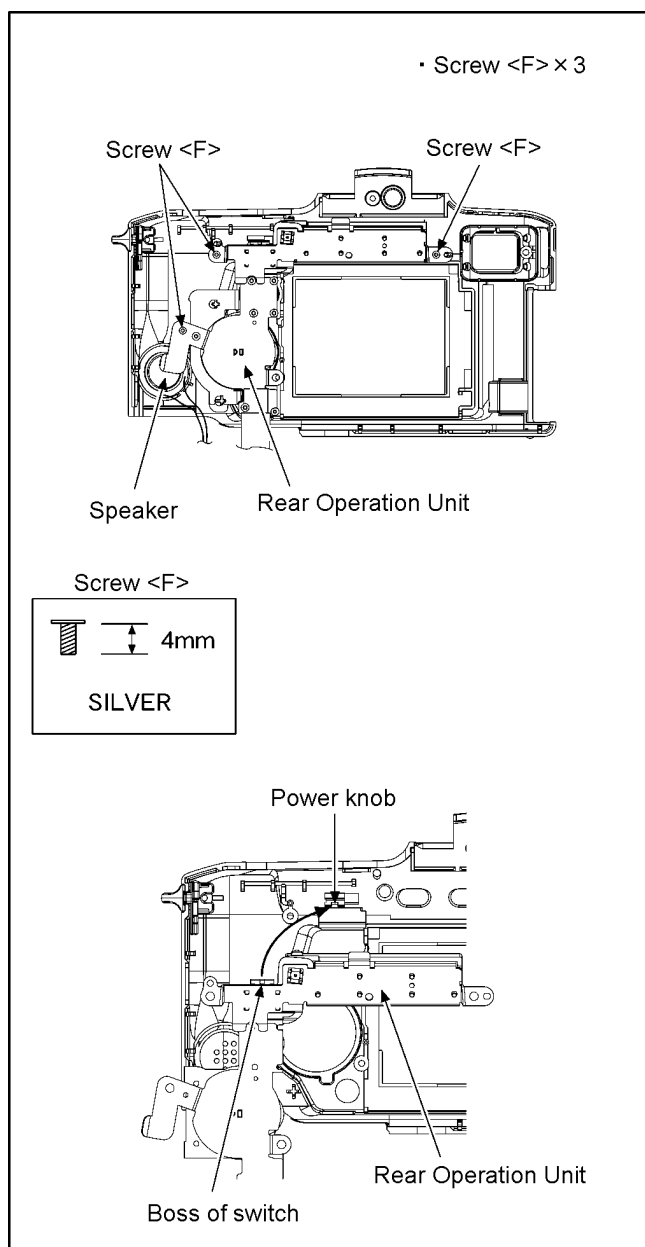


Fig. D5

12.3.5. Removal of the Main C.B.A. Unit, Capacitor Unit for charging and Battery Frame Unit

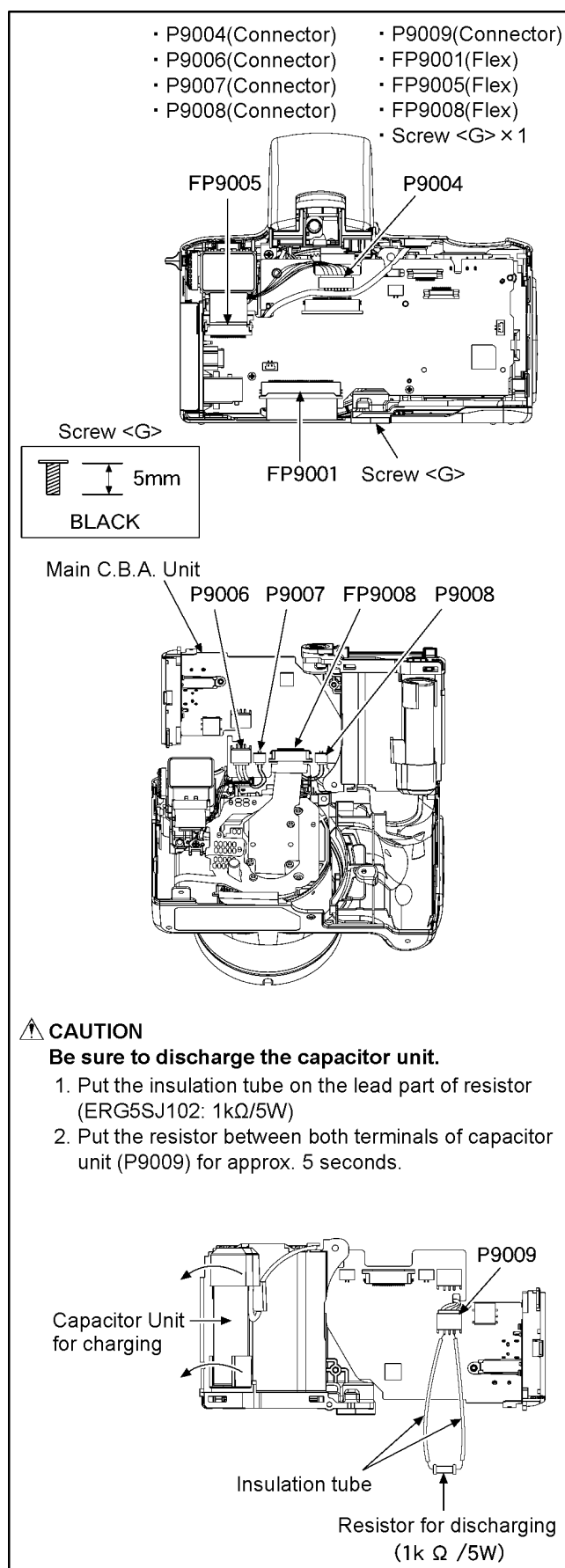


Fig. D6

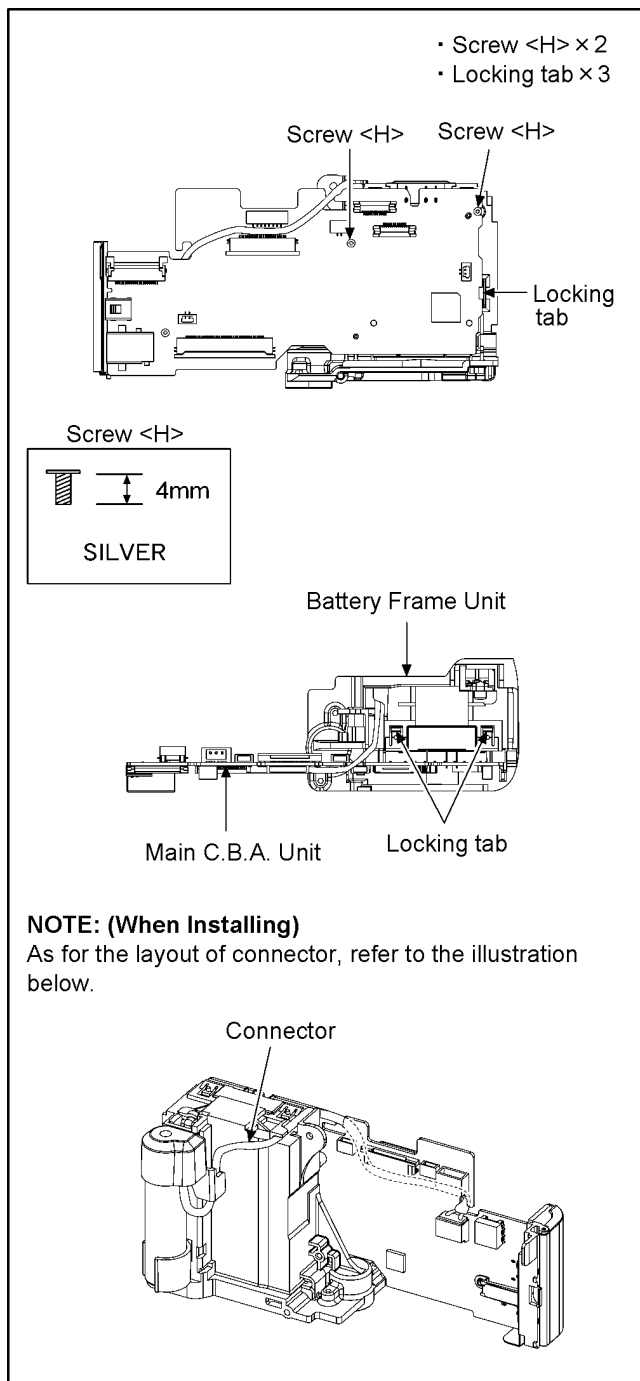


Fig. D7

12.3.6. Removal of the Jack Door Unit

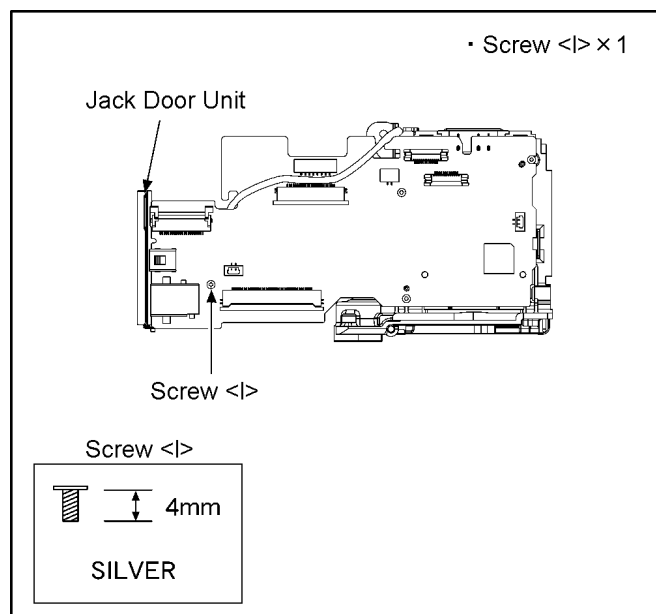


Fig. D8

12.3.7. Removal of the CCD Unit

To prevent unnecessary dust being entered, do not remove the CCD Unit except for servicing.

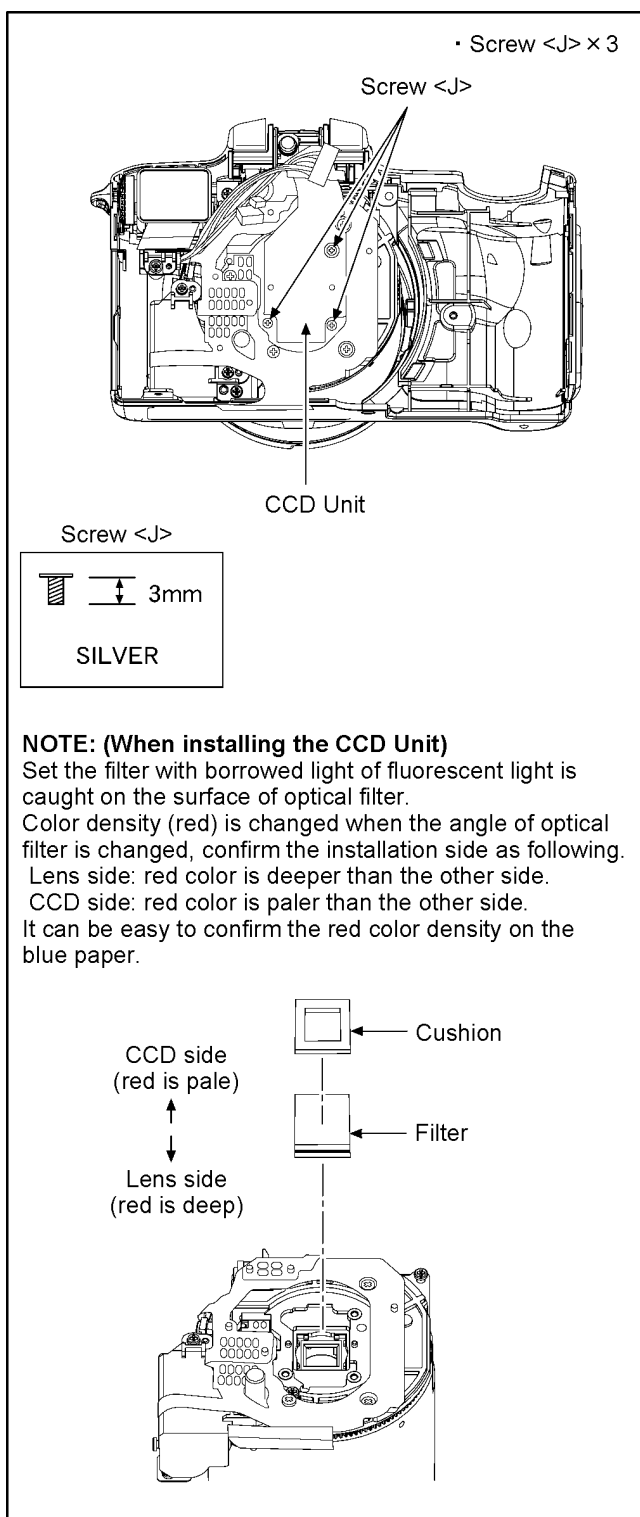


Fig. D9

12.3.8. Removal of the EVF Unit

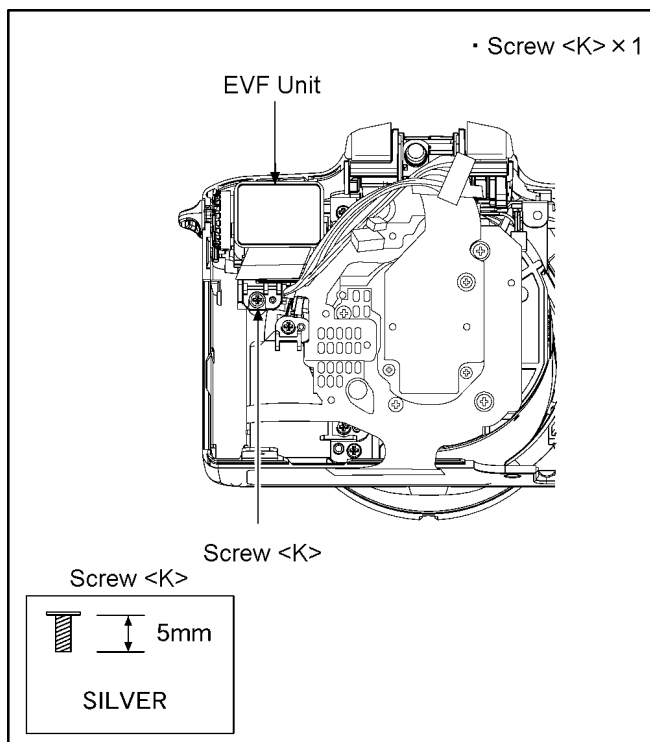


Fig. D10

12.3.9. Removal of the Flash Unit

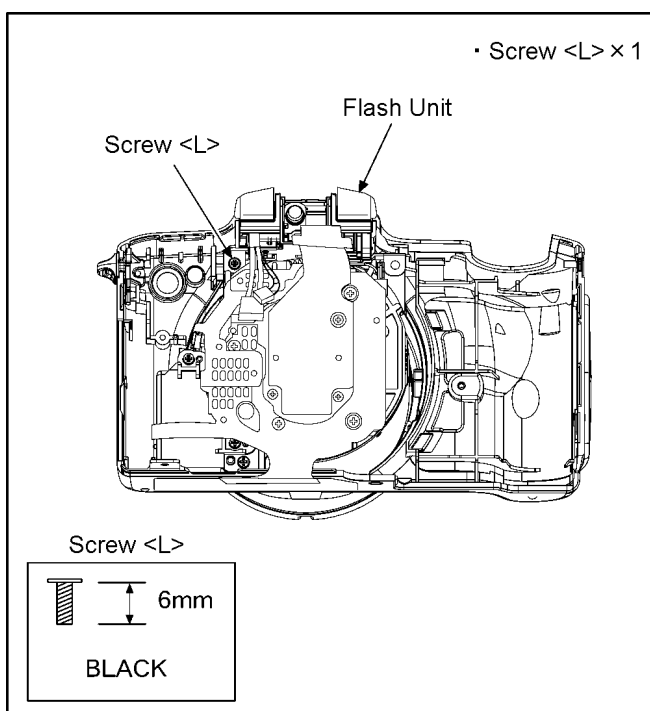


Fig. D11

12.3.10. Removal of the Lens Unit

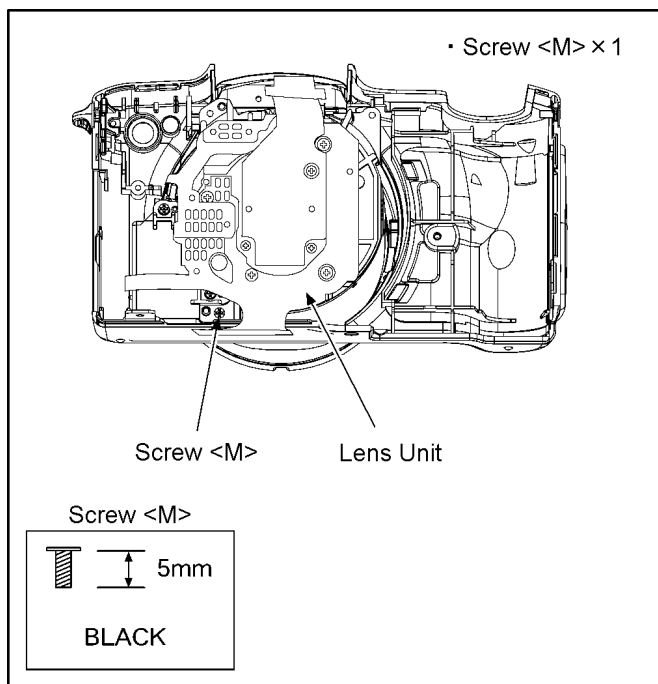


Fig. D12

NOTE: (When Assembling)

Confirm the contents as shown below.

- Condition of the screw is tightened.
- Assembling condition of mechanism parts (distortion, space etc.).
- Dust and dirt of the lens, display condition of the LCD (gradient etc.).
- Dust and dirt of the LCD

12.4. DISASSEMBLY/ASSEMBLY PROCEDURE FOR THE LENS

NOTE: When Disassembling and Assembling for the Lens

1. To prevent the lens from catching the dust and dirt, perform the following procedures with the CCD unit is installing.

Disassembling procedures for the CCD unit, refer to item 12.3.7.

2. Take care that the dust and dirt are not entered into the lens.

In case of the dust is putted on the lens, blow off them by airbrush.

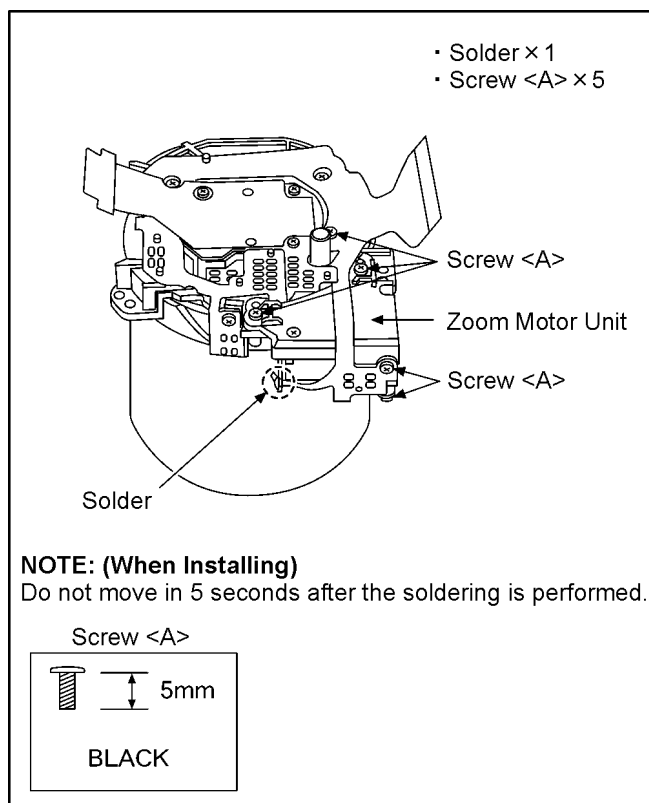
3. Do not touch the surface of lens.

4. Use lens cleaning KIT (BK)(VFK1900BK).

5. Apply the grease (VKF1829) to the point where is shown to "Grease apply" in the figure.

When the grease is applied, use a toothpick and apply thinly.

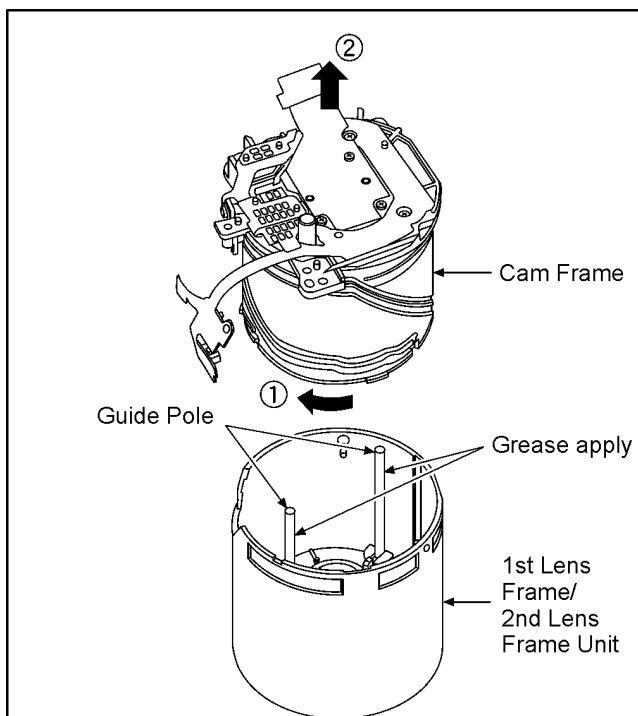
12.4.1. Removal of the Zoom Motor Unit



NOTE: (When Installing)

Do not move in 5 seconds after the soldering is performed.

12.4.2. Removal of the 3rd Lens Frame/ 4th Lens Frame/Drive Frame Unit

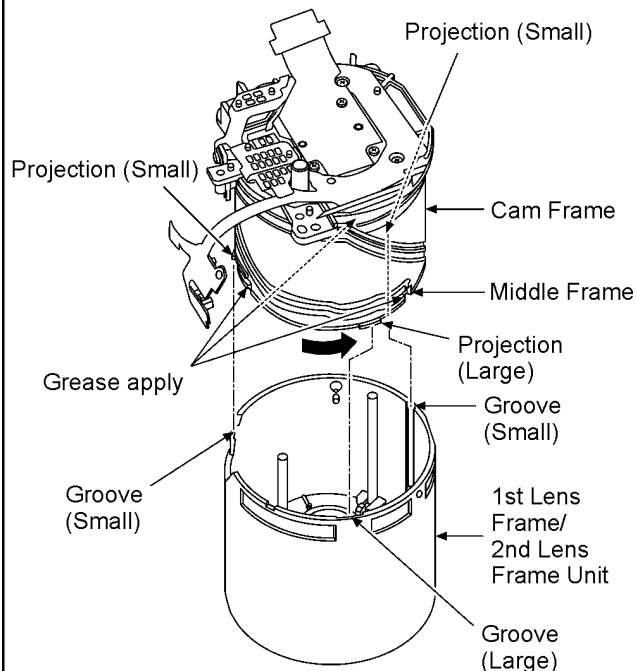


NOTE: (When Removing)

Remove the Cam Frame in the indicated by arrow.

Remove order: ①→②.

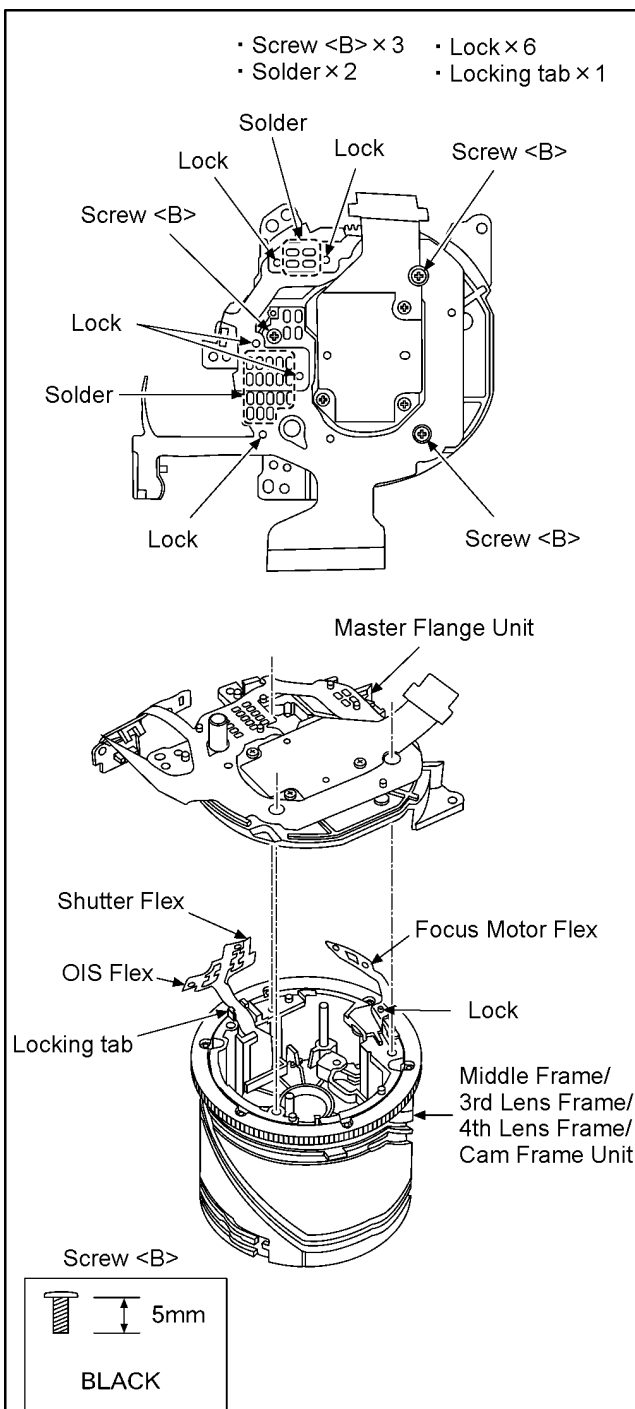
When the Cam Frame is difficult to turn to the indicated by arrow, move the gear of the Cam Frame to indicated by arrow 1 by tweezers



NOTE: (When Installing)

1. Align the cut of middle frame and the groove of cam frame.
2. Apply grease to 2 guide poles.
3. Align the groove of 1st lens frame unit and the projection of middle frame, and then turn the cam frame counterclockwise fully to starting position.

12.4.3. Removal of the Master Flange Unit

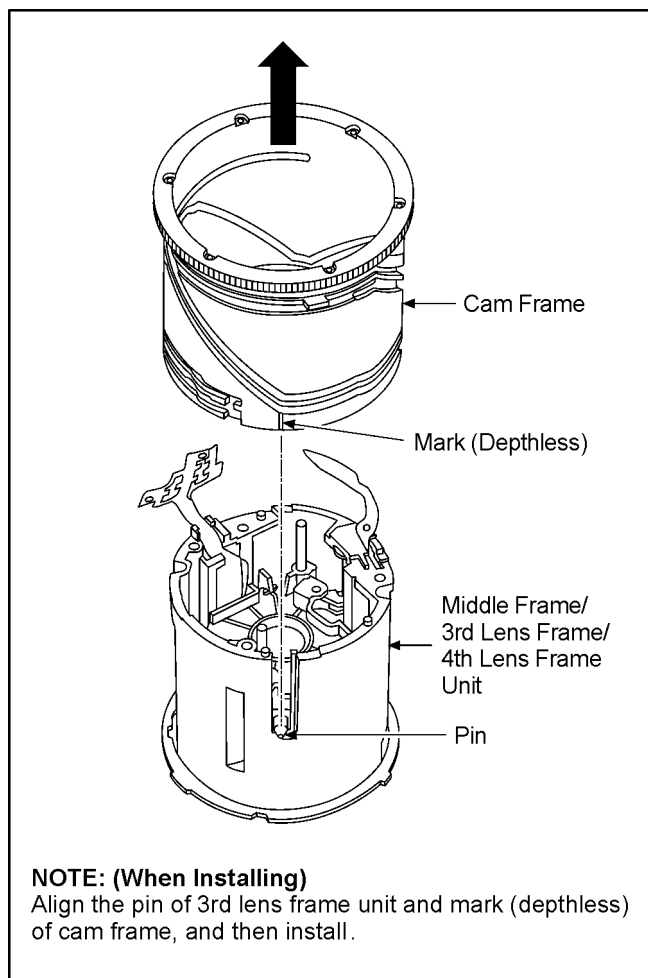


NOTE: (When Installing)

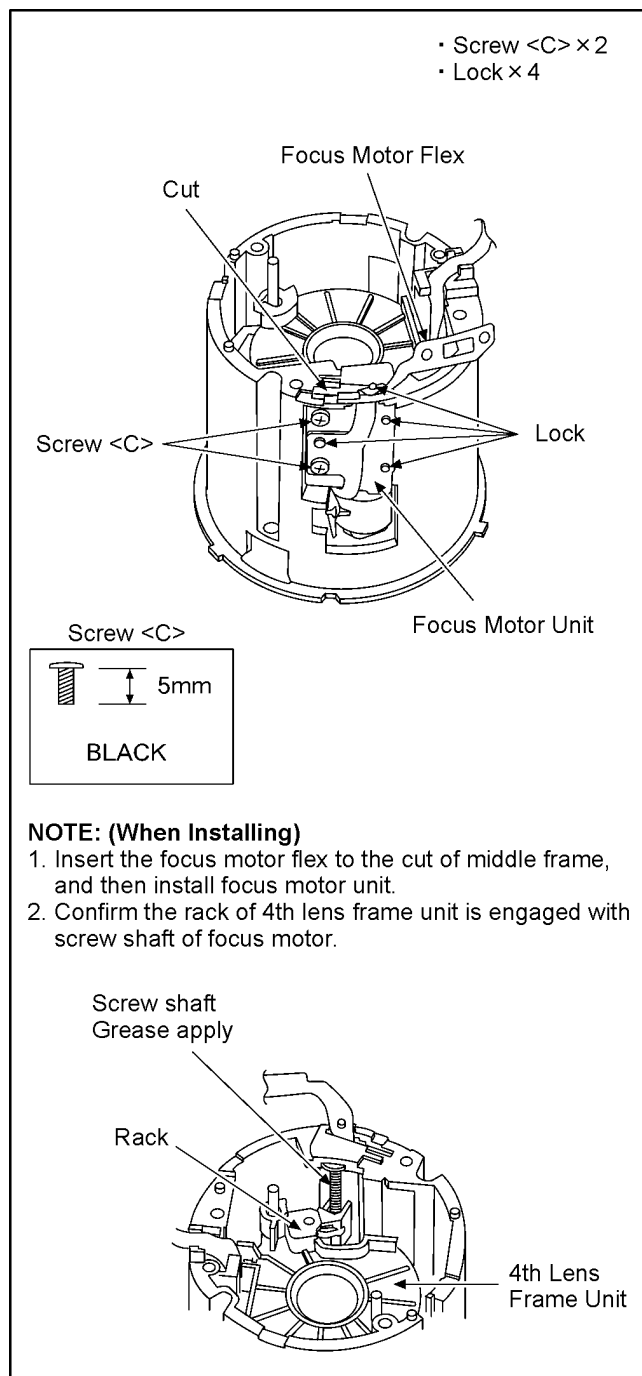
1. Latch the OIS and shutter flex to the locking tab and fix focus motor flex on the lock.
2. Screw 3 screws .
3. Fix 5 locks on master flange unit.
4. Soldered.

※Do not move in 5 seconds after the soldering is performed.
※Take care not to cut the OIS, shutter and focus motor flex.

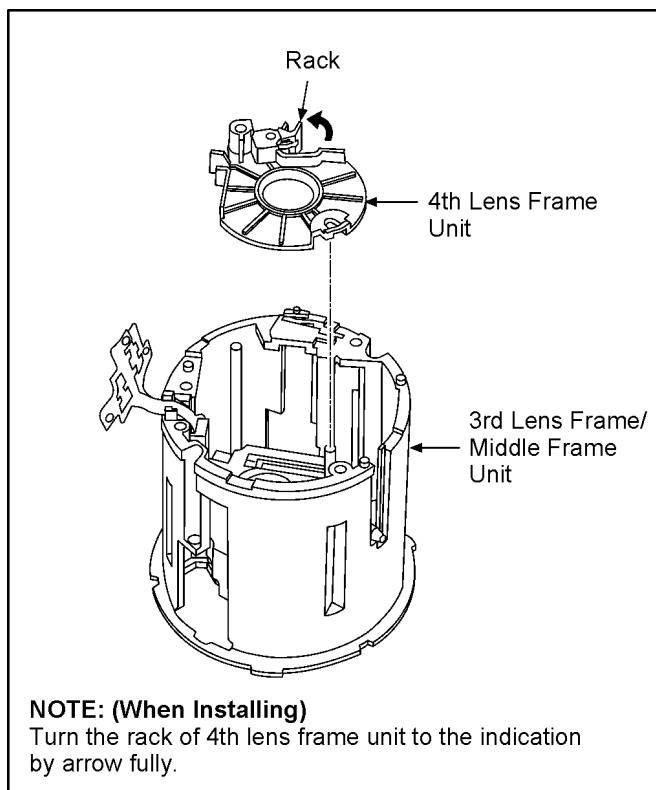
12.4.4. Removal of the Cam Frame



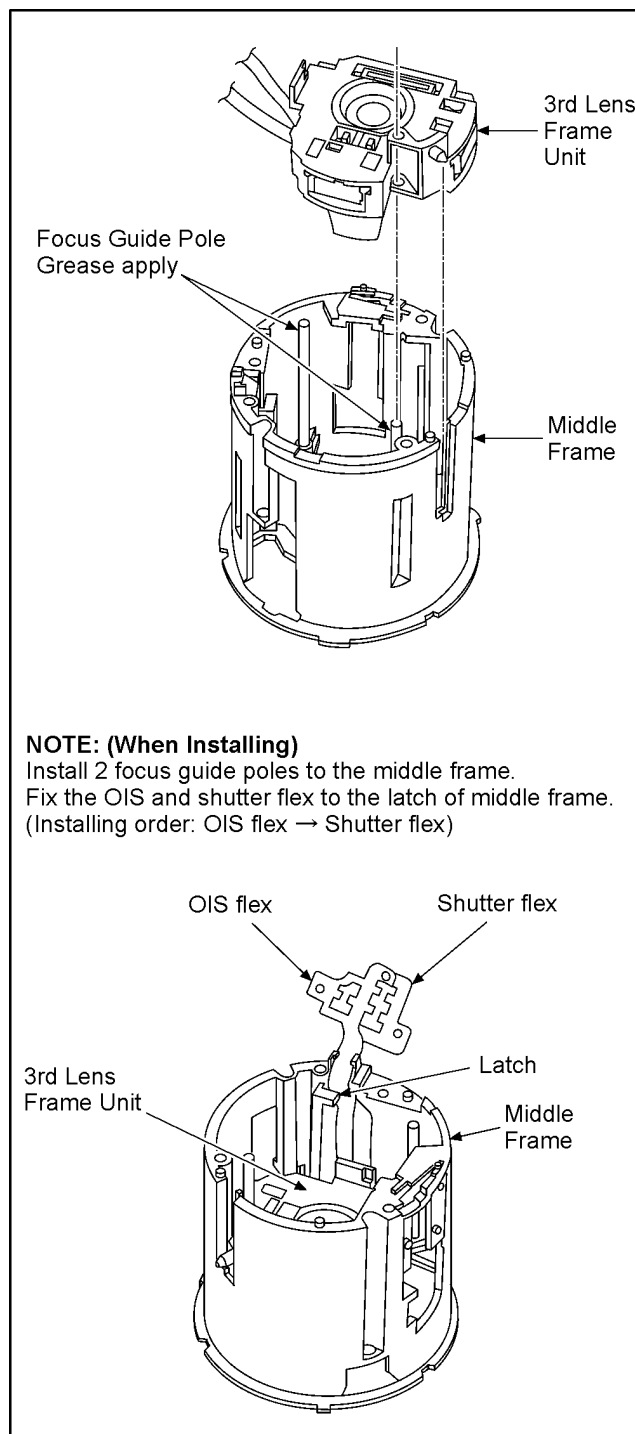
12.4.5. Removal of the Focus Motor Unit



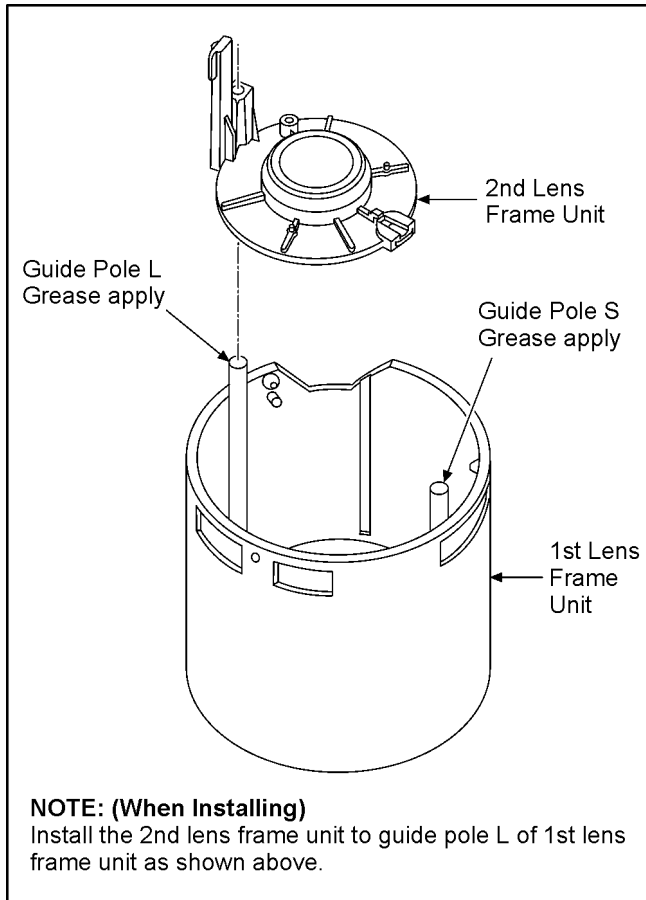
12.4.6. Removal of the 4th Lens Frame Unit



12.4.7. Removal of the 3rd Lens Frame Unit



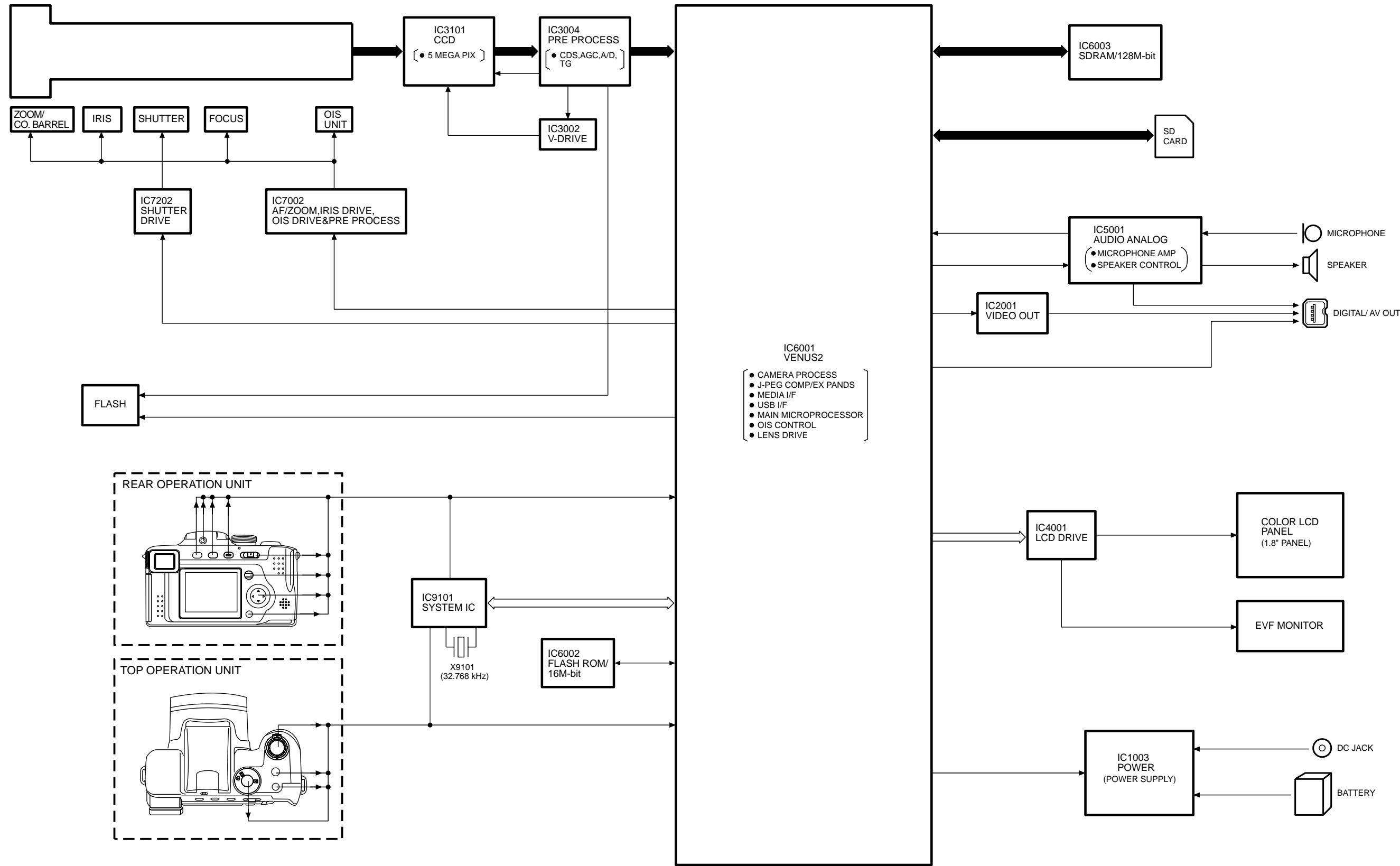
12.4.8. Removal of the 2nd Lens Frame Unit



13 SCHEMATIC DIAGRAMS

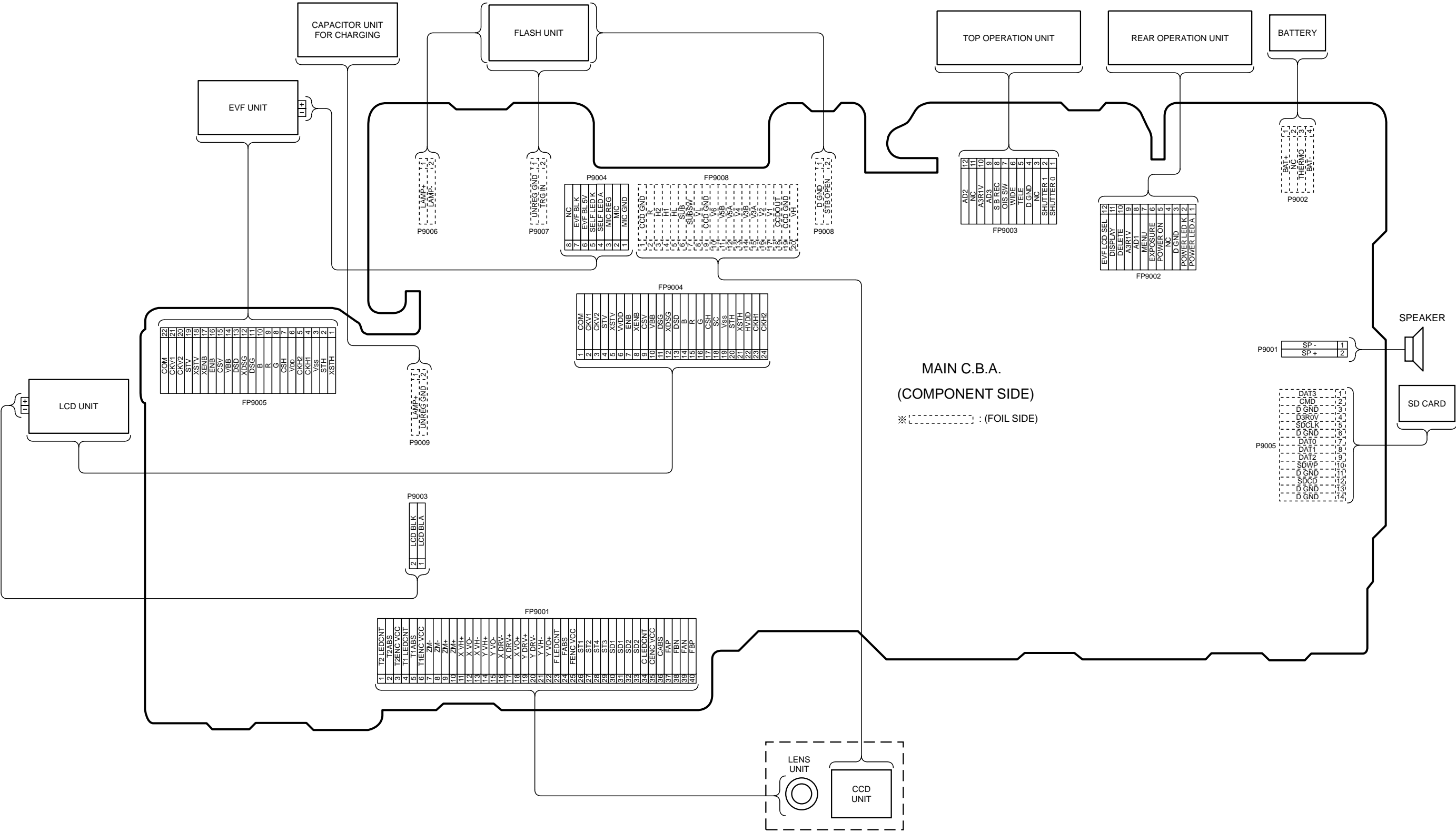
13.1. OVERALL BLOCK DIAGRAM

OVERALL BLOCK DIAGRAM

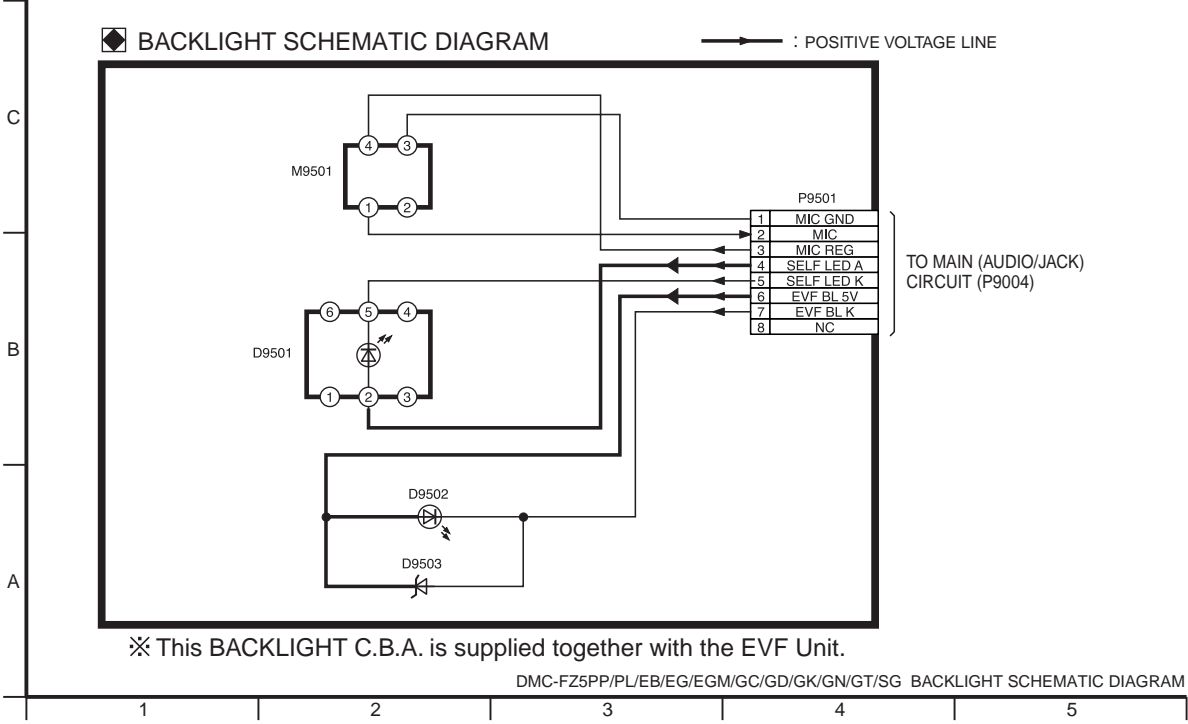


DMC-FZ5PP/PL/EB/EG/EGM/GC/GD/GK/GN/GT/SG OVERALL BLOCK DIAGRAM

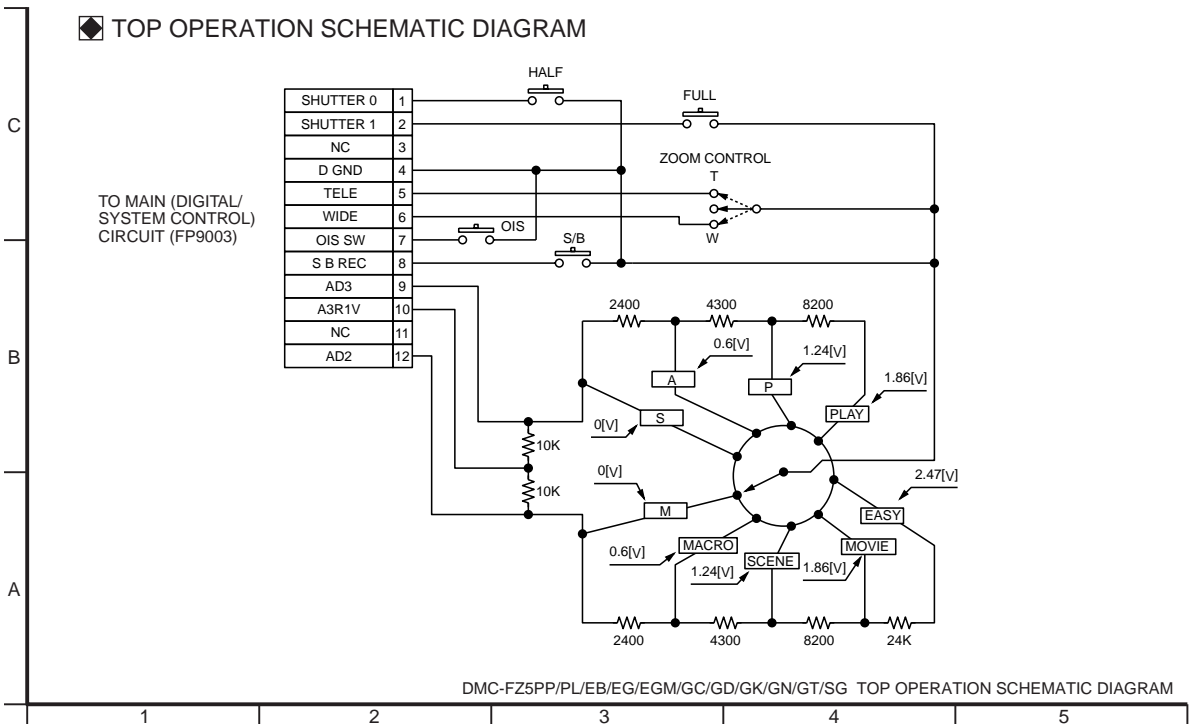
13.2. WIRING CONNECTION DIAGRAM



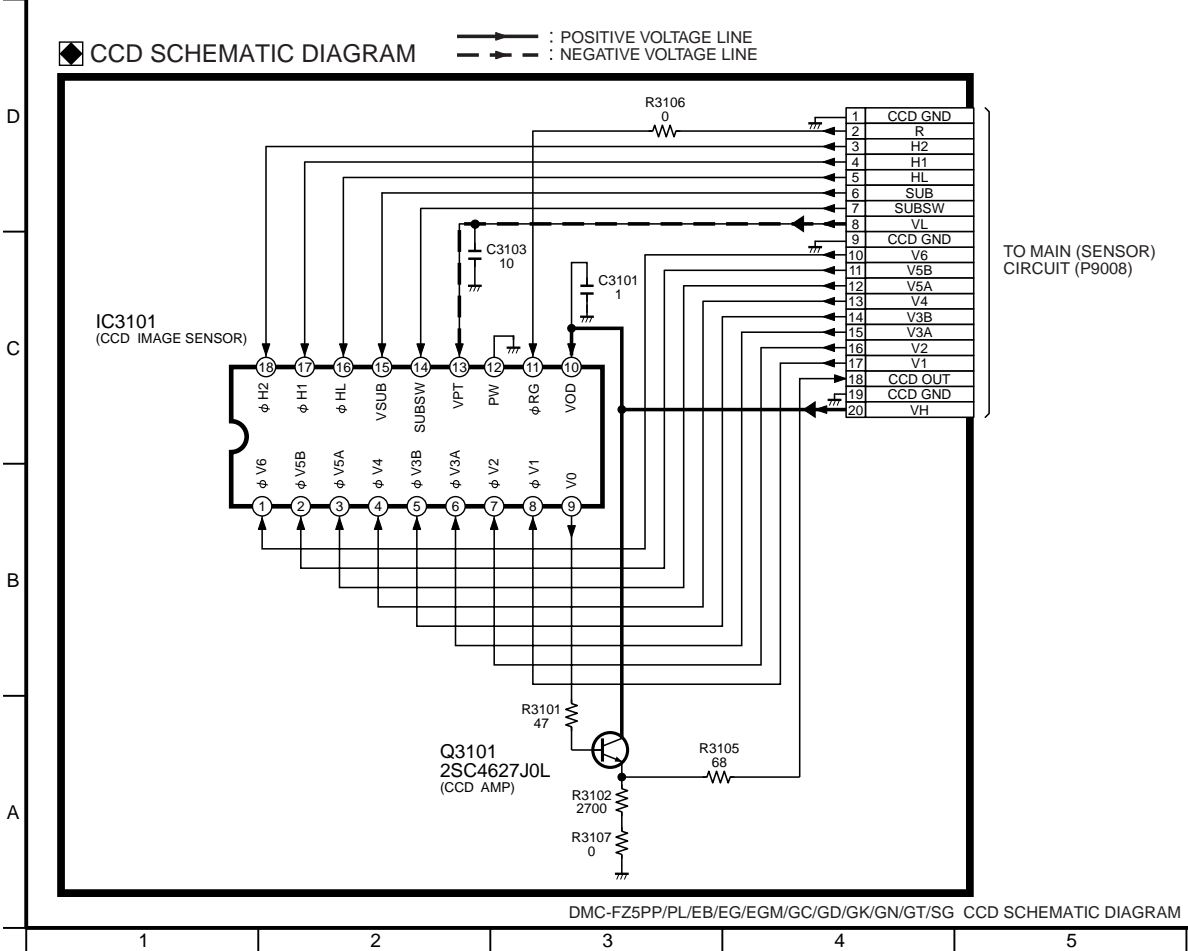
13.3. BACKLIGHT SCHEMATIC DIAGRAM



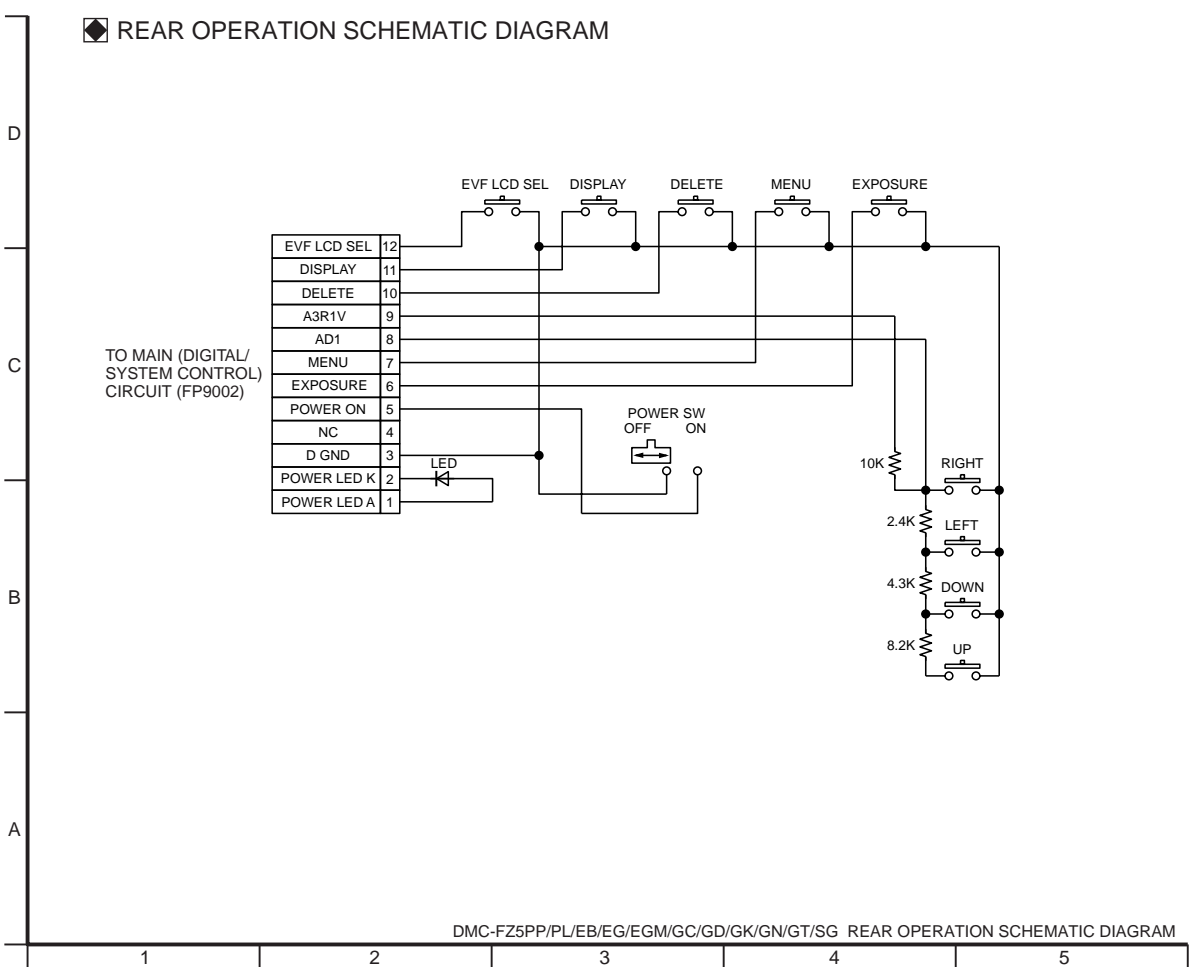
13.5. TOP OPERATION SCHEMATIC DIAGRAM



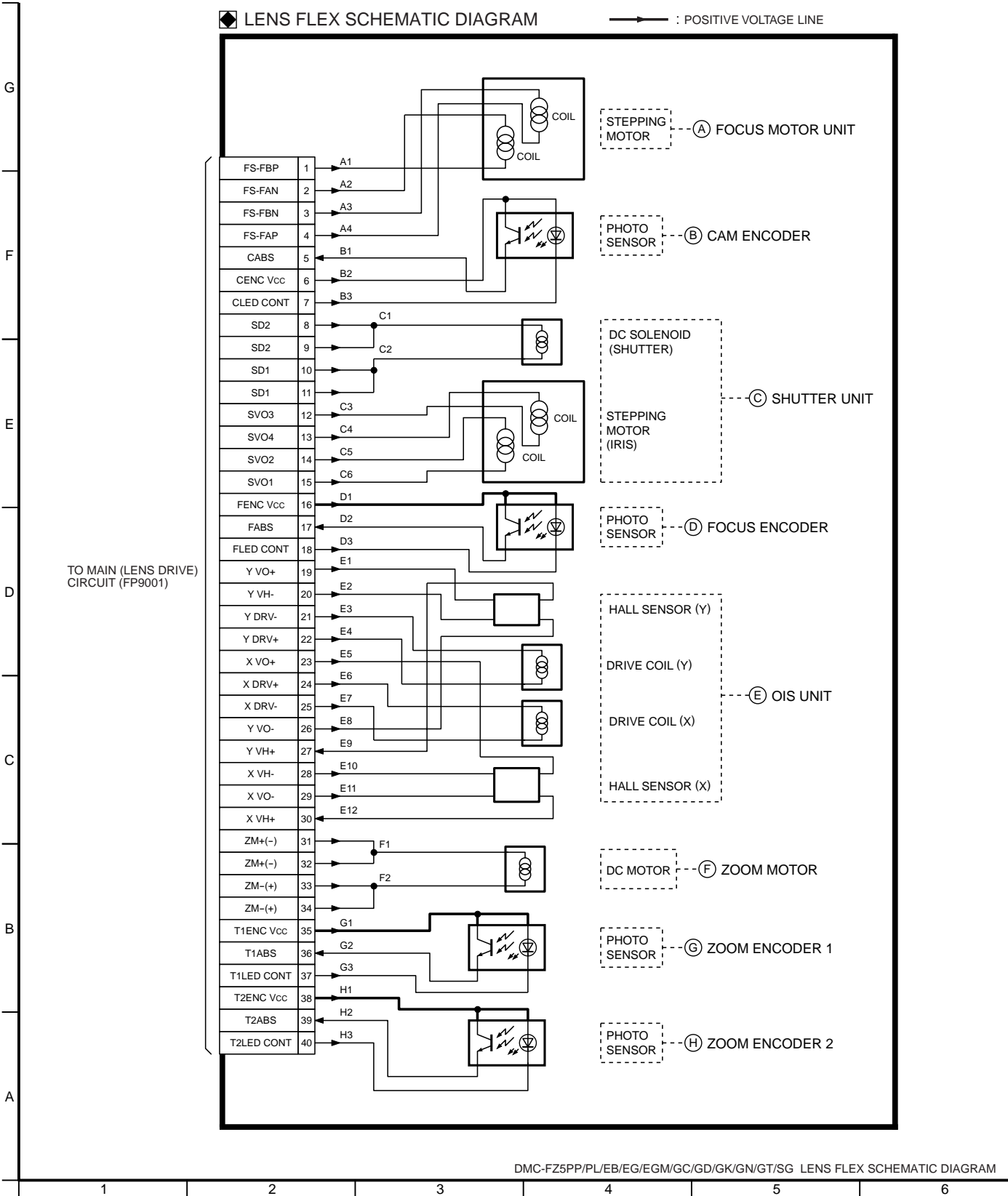
13.4. CCD SCHEMATIC DIAGRAM



13.6. REAR OPERATION SCHEMATIC DIAGRAM

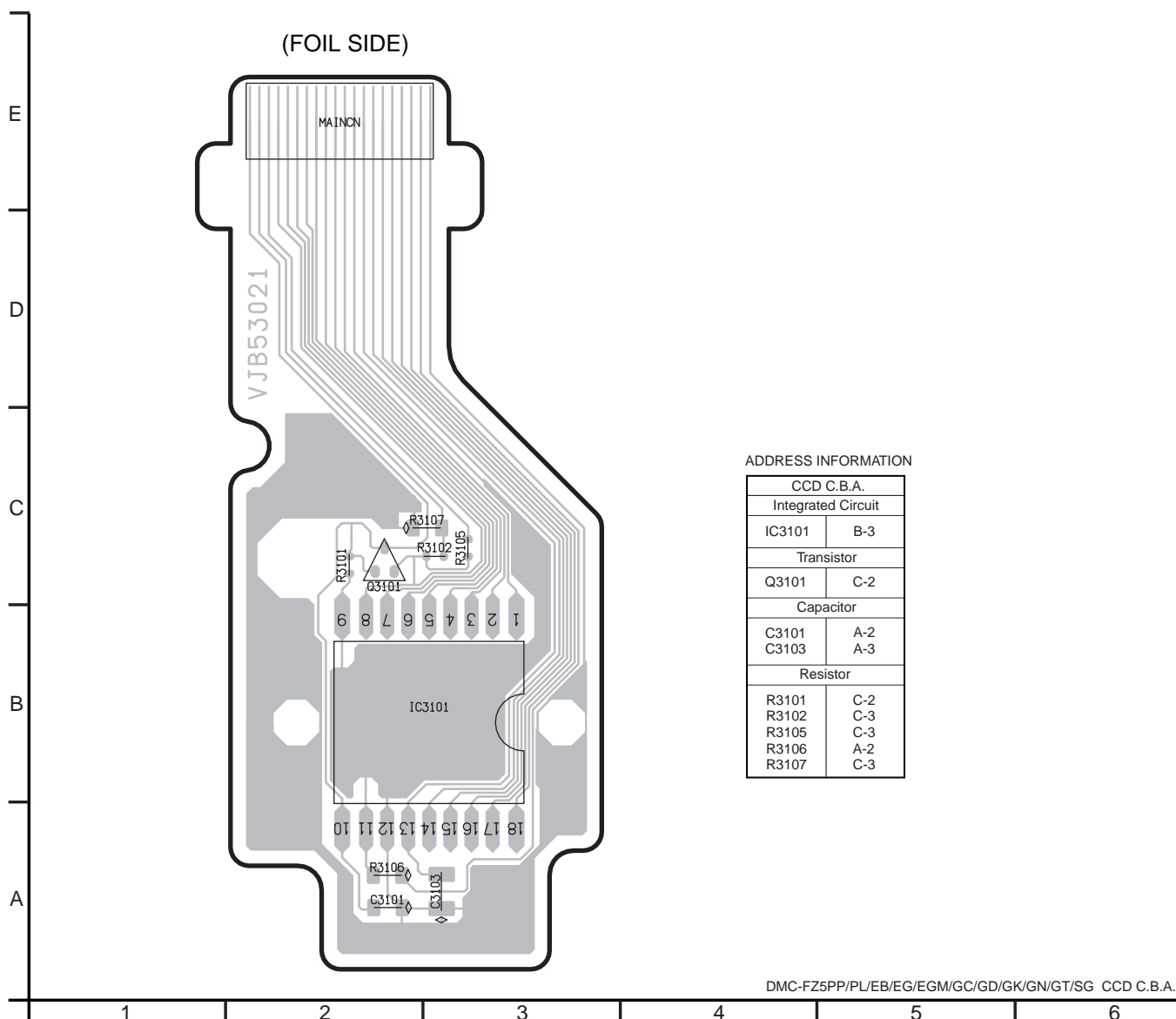


13.7. LENS FLEX SCHEMATIC DIAGRAM

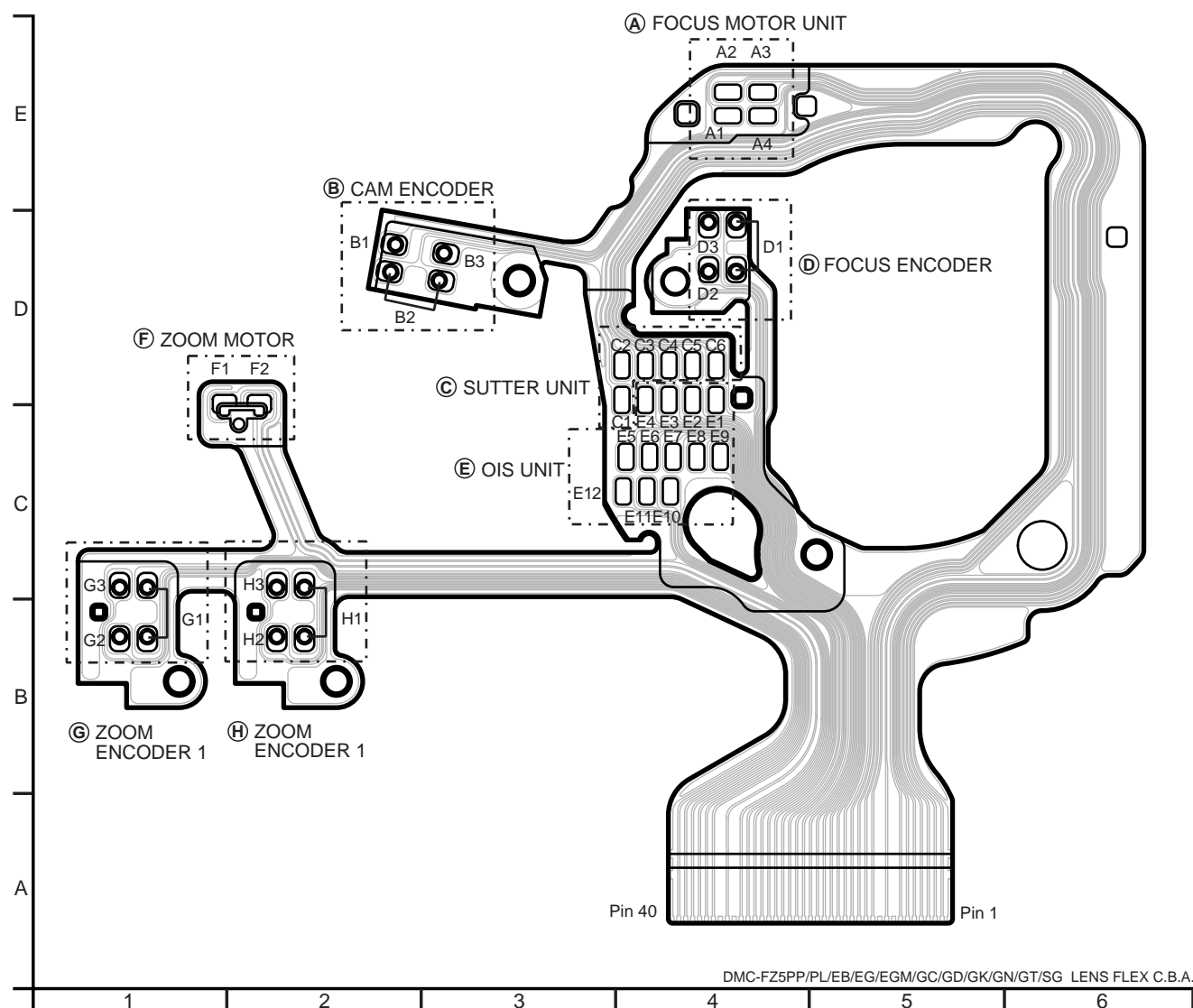


14 CIRCUIT BOARD ASSEMBLIES

14.1. CCD C.B.A.

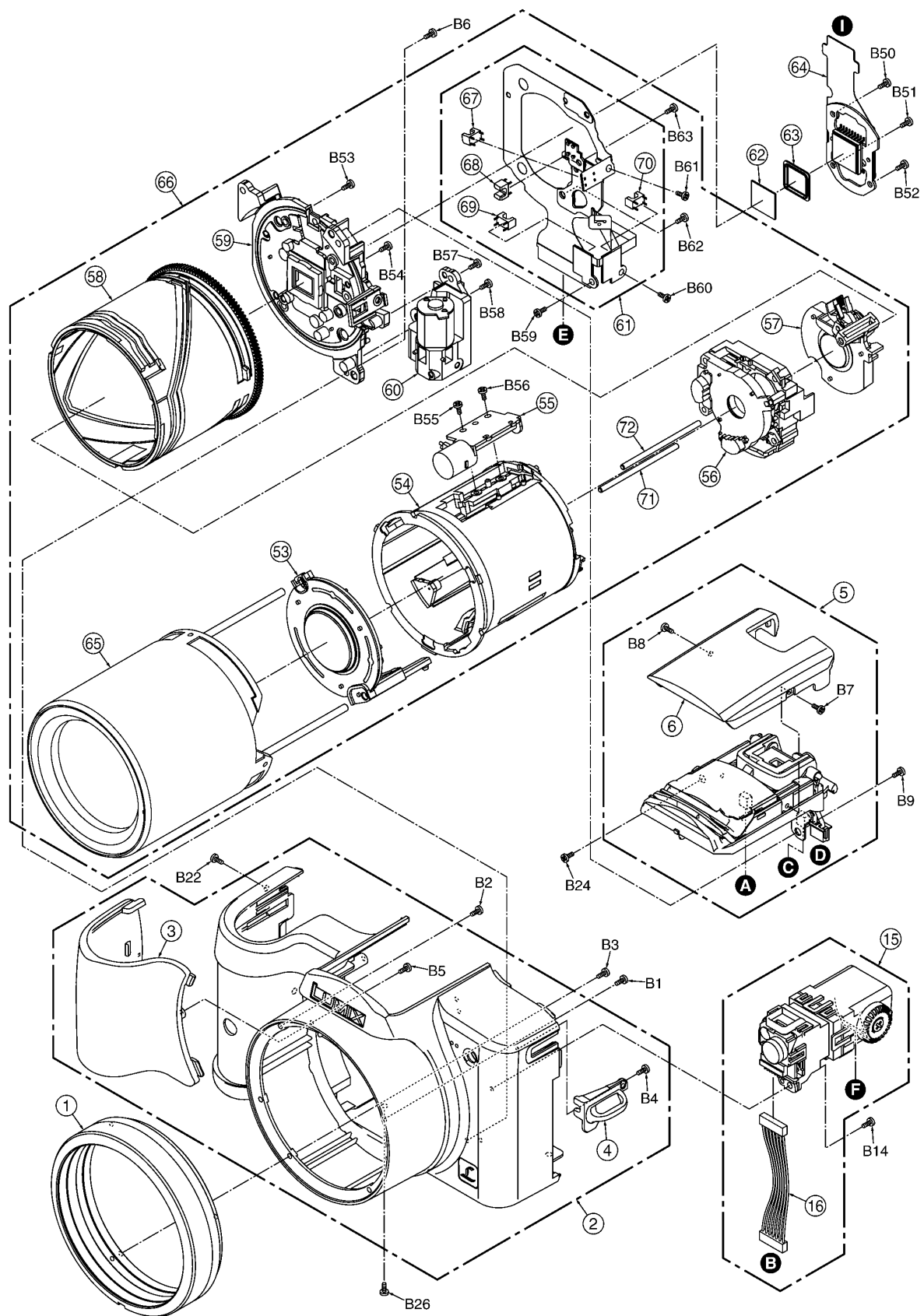


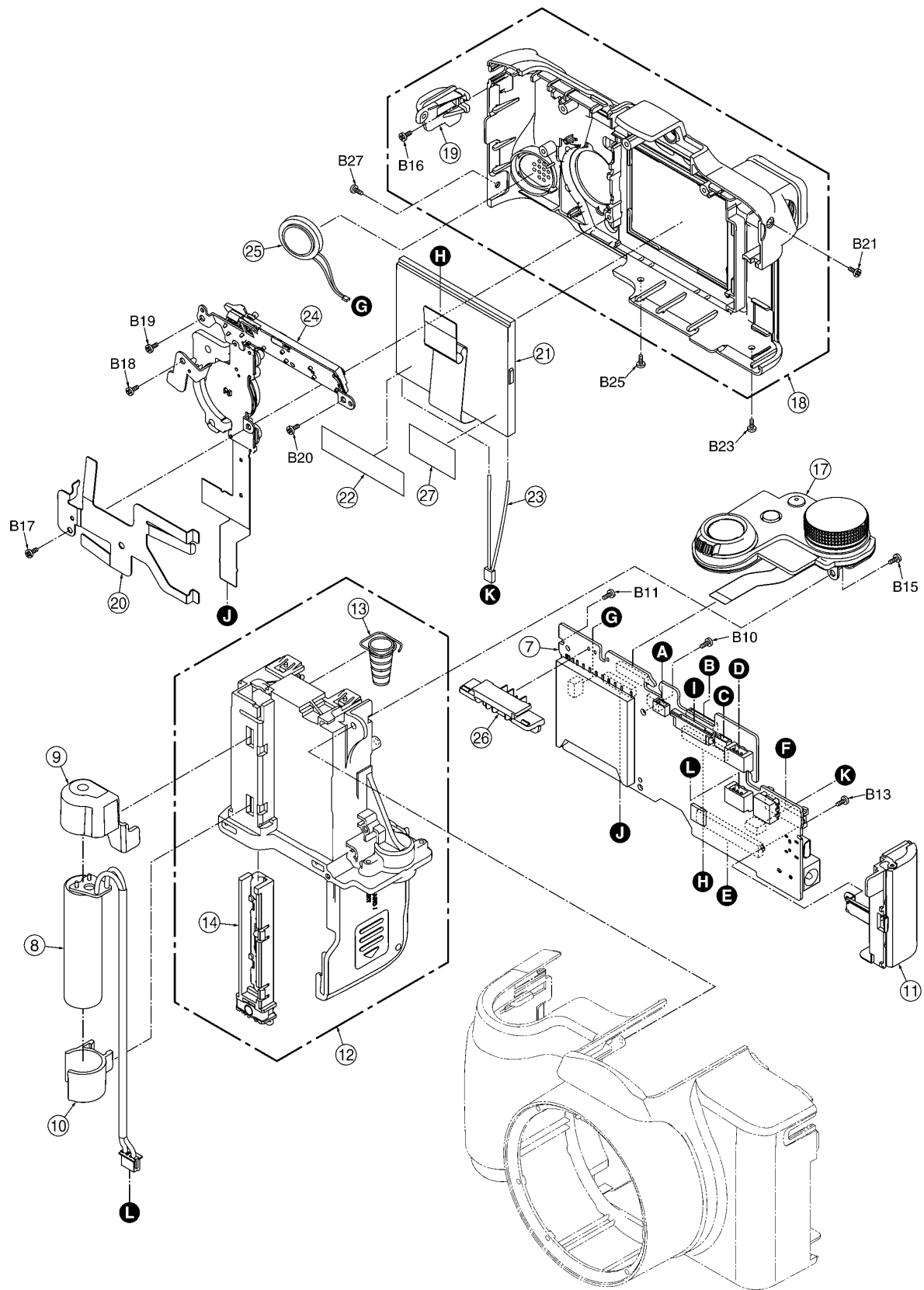
14.2. LENS FLEX C.B.A.



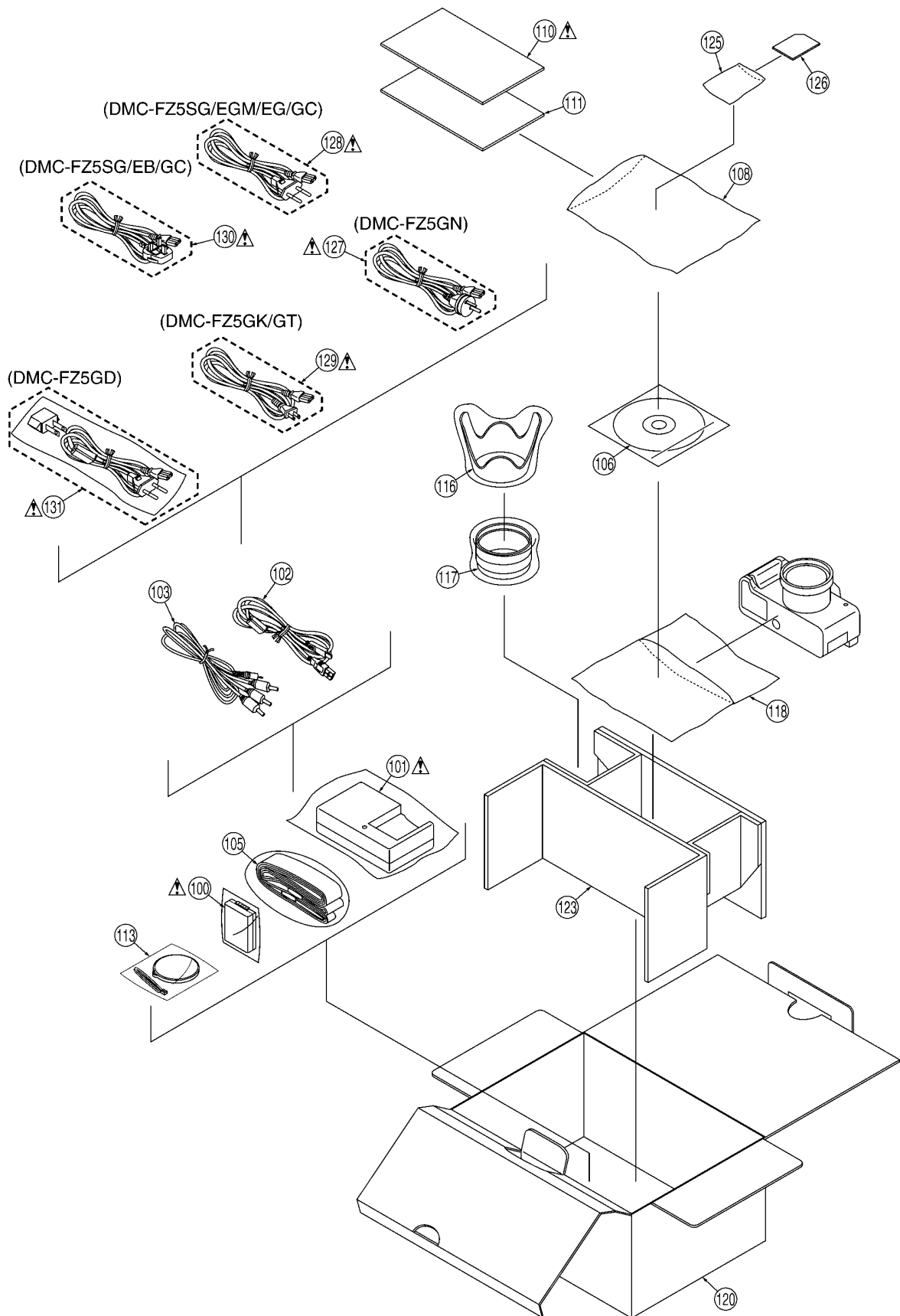
15 EXPLODED VIEWS

15.1. FRAME & CASING SECTION






15.2. PACKING PARTS & ACCESSORIES SECTION



16 REPLACEMENT PARTS LIST

16.1. MECHANICAL REPLACEMENT PARTS LIST

Notes: 1.* Be sure to make your orders of replacement parts according to this list.
 2. IMPORTANT SAFETY NOTICE
 Components identified with the mark  have the special characteristics for safety.
 When replacing any of these components, use only the same type.
 3. The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.
 4. Supply of CD-ROM, in accordance with license protection, is allowable as replacement parts only for customers who accidentally damaged or lost their own.

16.1.1. FRAME & CASING SECTION PARTS LIST

Definition of Parts supplier:

1. Parts marked with [AVC-SPC] in the remarks column are supplied from AVC COMPANY CS (AVC-SPC). Others are supplied from MKE SAIJO (MKE).

Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANICAL REPLACEMENT PARTS	
1	VDW1156	LENS RING FRONT	SILVER
1	VDW1157	LENS RING FRONT	BLACK
2	VYK1N19	FRONT CASE UNIT	SILVER
2	VYK1N20	FRONT CASE UNIT	BLACK
3	VGQ8400	GRIP PIECE FRONT	SILVER
3	VGQ8401	GRIP PIECE FRONT	BLACK
4	VMS7596	STRAP HOLDER	
5	VYK1N23	FLASH UNIT	SILVER
5	VYK1N24	FLASH UNIT	BLACK
6	VKM6710	FLASH CASE TOP	SILVER
6	VKM6711	FLASH CASE TOP	BLACK
7	VEP56020A	MAIN C.B.A.	[RTL]
8	VEK0H63	CONDENSER UNIT	
9	VGQ8402	CONDENSER HOLDER A	
10	VGQ8403	CONDENSER HOLDER B	
11	VYQ3389	JACK DOOR UNIT	SILVER
11	VYQ3390	JACK DOOR UNIT	BLACK
12	VYK1N25	BATTERY FRAME UNIT	SILVER
12	VYK1N26	BATTERY FRAME UNIT	BLACK
13	VMB3935	CATCHER SPRING	[AVC-SPC]
14	VYQ2569	BATTERY LOCK UNIT	[AVC-SPC]
15	VYQ3391	EVF UNIT	SILVER
15	VYQ3392	EVF UNIT	BLACK
16	VEE1A43	EVF CONNECTOR	
17	K0RB01200009	TOP OPERATION UNIT	SILVER
17	K0RB01200010	TOP OPERATION UNIT	BLACK
18	VYK1P16	REAR CASE UNIT	SILVER
18	VYK1P17	REAR CASE UNIT	BLACK
19	VMS7596	STRAP HOLDER	
20	VMP8282	LCD HOLDER	
21	L5EDDXH00021	LCD MODULE	
22	VGQ8427	SHADING SHEET	
23	VEE1A69	LCD BACKLIGHT CONNECTOR	
24	K0RB01200011	REAR OPERATION UNIT	SILVER
24	K0RB01200012	REAR OPERATION UNIT	BLACK
25	L0AA01A00009	SPEAKER	
26	K1ZZ00001294	BATTERY CATCHER	
27	VGQ8438	SHEET	
53	VXP2452	2ND LENS FRAME UNIT	[AVC-SPC]
54	VDW1147	MIDDLE FRAME	[AVC-SPC]
55	L6HA88NC0005	FOCUS MOTOR UNIT	[AVC-SPC]
56	VXP2455	3RD LENS FRAME UNIT	[AVC-SPC]
57	VXP2459	4TH LENS FRAME UNIT	[AVC-SPC]
58	VDW1167	CAM FRAME	[AVC-SPC]
59	VDW1154	MASTER FLANGE	[AVC-SPC]
60	L6DAAAHB0001	ZOOM MOTOR UNIT	[AVC-SPC]

Ref. No.	Part No.	Part Name & Description	Remarks
61	VEK0H56	LENS FLEX. UNIT	[AVC-SPC]
62	VDL1689	OPTICAL FILTER	[AVC-SPC]
63	VMX3437	CUSHION RUBBER	[AVC-SPC]
64	VEK0H61	CCD C.B.A.	[AVC-SPC]
65	VXP2483	1ST LENS FRAME UNIT	[AVC-SPC] SILVER
65	VXP2484	1ST LENS FRAME UNIT	[AVC-SPC] BLACK
66	VXW0711	LENS UNIT	[AVC-SPC] SILVER
66	VXW0714	LENS UNIT	[AVC-SPC] BLACK
67	B3NAA0000074	PHOTO SENSOR	[AVC-SPC]
68	B3NAA0000074	PHOTO SENSOR	[AVC-SPC]
69	B3NAA0000074	PHOTO SENSOR	[AVC-SPC]
70	B3NAA0000074	PHOTO SENSOR	[AVC-SPC]
71	VMS7580	FOCUS GUIDE POLE	[AVC-SPC]
72	VMS7580	FOCUS GUIDE POLE	[AVC-SPC]
B1	VHD1765	SCREW,STEEL	
B2	VHD1765	SCREW,STEEL	
B3	VHD1765	SCREW,STEEL	
B4	XQN16+BJ5FN	SCREW,STEEL	
B5	XQN16+BJ5FN	SCREW,STEEL	
B6	XQN16+BJ6FN	SCREW,STEEL	
B7	XQN16+BJ4FN	SCREW,STEEL	
B8	XQN16+BJ4FN	SCREW,STEEL	
B9	XQN16+BJ6FN	SCREW,STEEL	
B10	XQN16+BJ4FN	SCREW,STEEL	
B11	XQN16+BJ4FN	SCREW,STEEL	
B13	VHD1680	SCREW,STEEL	
B14	XQN16+BJ5FN	SCREW,STEEL	SILVER
B14	XQN16+BJ5JK	SCREW,STEEL	BLACK
B15	XQN16+BJ8FN	SCREW,STEEL	
B16	XQN16+BJ5FN	SCREW,STEEL	
B17	XQN16+BJ4FN	SCREW,STEEL	
B18	XQN16+BJ4FN	SCREW,STEEL	
B19	XQN16+BJ4FN	SCREW,STEEL	
B20	XQN16+BJ4FN	SCREW,STEEL	
B21	VHD1766	SCREW,STEEL	SILVER
B21	VHD1767	SCREW,STEEL	BLACK
B22	VHD1766	SCREW,STEEL	SILVER
B22	VHD1767	SCREW,STEEL	BLACK
B23	VHD1766	SCREW,STEEL	SILVER
B23	VHD1767	SCREW,STEEL	BLACK
B24	VHD1742	SCREW,STEEL	
B25	XQN16+BJ5FN	SCREW,STEEL	SILVER
B25	XQN16+BJ5FJK	SCREW,STEEL	BLACK
B26	XQN16+BJ5FN	SCREW,STEEL	SILVER
B26	XQN16+BJ5FJK	SCREW,STEEL	BLACK
B27	XQN16+BJ5FN	SCREW,STEEL	SILVER
B27	XQN16+BJ5FJK	SCREW,STEEL	BLACK
B50	XQN14+CJ3FN	SCREW,STEEL	[AVC-SPC]
B51	XQN14+CJ3FN	SCREW,STEEL	[AVC-SPC]
B52	XQN14+CJ3FN	SCREW,STEEL	[AVC-SPC]
B53	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B54	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B55	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B56	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B57	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B58	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B59	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B60	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B61	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B62	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]
B63	XQN16+CJ5FJK	SCREW,STEEL	[AVC-SPC]

16.1.2. PACKING PARTS & ACCESSORIES

SECTION PARTS LIST

Definition of Parts supplier:

1. Parts marked with [AVC-SPC] in the remarks column are supplied from AVC COMPANY CS (AVC-SPC). Others are supplied from MKE SAIJO (MKE).


Ref. No.	Part No.	Part Name & Description	Remarks
100	-----	BATTERY	△
101	DE-994BA	BATTERY CHARGER	△ DMC-FZ5SG/ GD/GK/GT/GC
101	DE-993BB	BATTERY CHARGER	△ DMC-FZ5PP/PL
101	DE-994AA	BATTERY CHARGER	△ DMC-FZ5EB/ EGM/EG/GN
102	K1HA08CD0004	USB CABLE W/PLUG	[AVC-SPC]
103	K1HA08CD0005	AUDIO VIDEO CABLE W/PLUG	[AVC-SPC]
105	VFC4078	STRAP	
106	VFF0255-S	CD-ROM	SEE NOTE [AVC-SPC] DMC-FZ5SG/ EB/EGM/EG/ PL/GD/GN/GK/ GT/GC
106	VFF0254-S	CD-ROM	SEE NOTE [AVC-SPC] DMC-FZ5PP
108	VPF1132	BAG, POLYETHYLENE	[AVC-SPC] DMC-FZ5SG/ EGM/EG/PL/GC
108	VPF1100	BAG, POLYETHYLENE	[AVC-SPC] DMC-FZ5PP/ EB/GD/GN/GK/ GT
110	VQT0Q30	INSTRUCTION BOOK (ENGLISH)	△ [AVC-SPC] DMC-FZ5SG/GC
110	VQT0Q31	INSTRUCTION BOOK (CHINESE (TRADITIONAL))	△ [AVC-SPC] DMC-FZ5SG/GC
110	VQT0Q32	INSTRUCTION BOOK (RUSSIAN)	△ [AVC-SPC] DMC-FZ5SG/GC
110	VQT0Q33	INSTRUCTION BOOK (ARABIC)	△ [AVC-SPC] DMC-FZ5SG/GC
110	VQT0Q09	INSTRUCTION BOOK (ENGLISH)	△ [AVC-SPC] DMC-FZ5PP
110	VQT0Q10	INSTRUCTION BOOK (CANADIAN FRENCH)	△ [AVC-SPC] DMC-FZ5PP
110	VQT0Q28	INSTRUCTION BOOK (ENGLISH)	△ [AVC-SPC] DMC-FZ5EB
110	VQT0Q22	INSTRUCTION BOOK (SPANISH)	△ [AVC-SPC] DMC-FZ5EGM
110	VQT0Q23	INSTRUCTION BOOK (PORTUGUESE)	△ [AVC-SPC] DMC-FZ5EGM
110	VQT0Q24	INSTRUCTION BOOK (SWEDISH)	△ [AVC-SPC] DMC-FZ5EGM
110	VQT0Q25	INSTRUCTION BOOK (DANISH)	△ [AVC-SPC] DMC-FZ5EGM
110	VQT0Q16	INSTRUCTION BOOK (GERMAN)	△ [AVC-SPC] DMC-FZ5EG
110	VQT0Q17	INSTRUCTION BOOK (FRENCH)	△ [AVC-SPC] DMC-FZ5EG
110	VQT0Q18	INSTRUCTION BOOK (ITALIAN)	△ [AVC-SPC] DMC-FZ5EG
110	VQT0Q19	INSTRUCTION BOOK (DUTCH)	△ [AVC-SPC] DMC-FZ5EG
110	VQT0Q12	INSTRUCTION BOOK (ENGLISH)	△ [AVC-SPC] DMC-FZ5PL
110	VQT0Q13	INSTRUCTION BOOK (SPANISH)	△ [AVC-SPC] DMC-FZ5PL
110	VQT0Q14	INSTRUCTION BOOK (PORTUGUESE)	△ [AVC-SPC] DMC-FZ5PL
110	VQT0Q42	INSTRUCTION BOOK (KOREAN)	△ [AVC-SPC] DMC-FZ5GD
110	VQT0Q40	INSTRUCTION BOOK (ENGLISH)	△ [AVC-SPC] DMC-FZ5GN

Ref. No.	Part No.	Part Name & Description	Remarks
110	VQT0Q38	INSTRUCTION BOOK (CHINESE (SIMPLIFIED))	△ [AVC-SPC] DMC-FZ5GK
110	VQT0Q36	INSTRUCTION BOOK (CHINESE (TRADITIONAL))	△ [AVC-SPC] DMC-FZ5GT
111	VQT0L73	INSTRUCTION BOOK/ APPLICATION (ENGLISH/ CHINESE (TRADITIONAL))	[AVC-SPC] DMC-FZ5SG/GC
111	VQT0L75	INSTRUCTION BOOK/ APPLICATION (ARABIC/RUSSIAN)	[AVC-SPC] DMC-FZ5SG/GC
111	VQT0L70	INSTRUCTION BOOK/ APPLICATION (ENGLISH)	[AVC-SPC] DMC-FZ5PP
111	VQT0L76	INSTRUCTION BOOK/ APPLICATION (ENGLISH)	[AVC-SPC] DMC-FZ5EB
111	VQT0L79	INSTRUCTION BOOK/ APPLICATION (ITALIAN/DUTCH)	[AVC-SPC] DMC-FZ5EGM
111	VQT0L80	INSTRUCTION BOOK/ APPLICATION (SWEDISH)	[AVC-SPC] DMC-FZ5EGM
111	VQT0L77	INSTRUCTION BOOK/ APPLICATION (GERMAN/FRENCH)	[AVC-SPC] DMC-FZ5EG
111	VQT0L78	INSTRUCTION BOOK/ APPLICATION (ITALIAN/DUTCH)	[AVC-SPC] DMC-FZ5EG
111	VQT0L71	INSTRUCTION BOOK/ APPLICATION (ENGLISH/ SPANISH/PORTUGUESE)	[AVC-SPC] DMC-FZ5PL
111	VQT0L72	INSTRUCTION BOOK/ APPLICATION (KOREAN)	[AVC-SPC] DMC-FZ5GD
111	VQT0L81	INSTRUCTION BOOK/ APPLICATION (ENGLISH)	[AVC-SPC] DMC-FZ5GN
111	VQT0L74	INSTRUCTION BOOK/ APPLICATION (CHINESE (SIMPLIFIED))	[AVC-SPC] DMC-FZ5GK
111	VQT0P63	INSTRUCTION BOOK/ APPLICATION (ENGLISH/ CHINESE (TRADITIONAL))	[AVC-SPC] DMC-FZ5GT
113	VYK0W73	LENS CAP UNIT	
116	VYQ3428	LENS HOOD UNIT	SILVER
116	VYQ3429	LENS HOOD UNIT	BLACK
117	VYQ3387	LENS ADAPTOR UNIT	SILVER
117	VYQ3388	LENS ADAPTOR UNIT	BLACK
118	VPF1166	CAMERA BAG, POLYETHYLENE	
120	VPK2976	PACKING CASE, PAPER	DMC-FZ5SG/ EB/EGM/EG/ PL/GD/GN/GT/ GC (SILVER)
120	VPK2979	PACKING CASE, PAPER	DMC-FZ5SG/ EB/EGM/EG/ PL/GD/GN/GT/ GC (BLACK)
120	VPK2975	PACKING CASE, PAPER	DMC-FZ5PP (SILVER)
120	VPK2978	PACKING CASE, PAPER	DMC-FZ5PP (BLACK)
120	VPK2980	PACKING CASE, PAPER	DMC-FZ5GK (SILVER)
120	VPK2981	PACKING CASE, PAPER	DMC-FZ5GK (BLACK)
123	VPN6220	CUSHION, PAPER	
125	VPF1214	SD CARD BAG, POLYETHYLENE	
126	RP-SD016BVE0	SD CARD	
127	K2CJ2DA00008	AC CORD W/PLUG	△ DMC-FZ5GN
128	RJA0019-2X	AC CORD W/PLUG	△ DMC-FZ5SG/ EGM/EG/GC
128	K2CR2DA00004	AC CORD W/PLUG	OR △ DMC-FZ5SG/ EGM/EG/GC
129	K2CA2CA00020	AC CORD W/PLUG	△ DMC-FZ5GK
129	K2CA2CA00027	AC CORD W/PLUG	△ DMC-FZ5GT
130	RJA0053-3X	AC CORD W/PLUG	△ DMC-FZ5SG/ EB/GC
131	RJA0078-1X	AC CORD W/PLUG	△ DMC-FZ5GD

16.1.3. SERVICE FIXTURE & TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFK1582A1225	EXTENSION CABLE / (12PIN-FFC)	[FP9003 - TOP OPERATION UNIT] [FP9002 - REAR OPERATION UNIT]
	VFK1576DC202	EXTENSION CABLE / (2PIN-CABLE)	[P9001 - SPEAKER] [P9003 - LCD BACKLIGHT] [P9007 - FLASH UNIT] [P9008 - FLASH UNIT]
	VFK1576DSC03	EXTENSION CABLE / (2PIN-CABLE)	[P9006 - FLASH UNIT]
	VFK1284	EXTENSION CABLE / (24PIN-FFC)	[FP9004 - LCD MODULE]
	VFK1282	EXTENSION CABLE / (22PIN-FFC)	[FP9005 - EVF UNIT]
	VFK1461	EXTENSION CABLE / (20PIN-FFC)	[FP9008 - CCD UNIT]
	VFK1920	EXTENSION CABLE / (8PIN-CABLE)	[P9004 - EVF UNIT]
	VFK1953	EXTENSION CABLE / (40PIN-FFC)	[FP9001- LENS UNIT]
	ERG5SJ102	RESISTOR FOR DISCHARGING	
	VFK1164TDVLB	LIGHT BOX	
	VFK1164TCM02	INFINITY LENS	
	VFK1949	TR CHART	
	VFK1900BK	LENS CLEANING KIT (BK)	
	VFK1829	GLEASE (FOR LENS)	
	VFK1850	GLEASE (FOR FOCUS MOTOR)	
	VFK1929	BALL POINT DRIVER	

16.2. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
 2. IMPORTANT SAFETY NOTICE : Components identified with the mark  have the special characteristics for safety. When replacing any of these components, use only the same type.
 3. Unless otherwise specified, All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf), P=uuF.
 4. The P.C.Board units marked with "■" show below the main assembled parts.
 5. The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

E.S.D. standards for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section.

Definition of Parts supplier:

1. Parts marked with [MBI] in the remarks column are supplied from "Matsushita Battery Industrial co., ltd." .
2. Parts marked with [AVC-SPC] in the remarks column are supplied from AVC COMPANY CS (AVC-SPC). Others are supplied from MKE SAIJO (MKE).

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD ASSEMBLY	
n	VEP56020A	MAIN C.B.A.	E.S.D. [RTL]
n	VEK0H61	CCD C.B.A.	[AVC-SPC]
n		MAIN C.B.A.	E.S.D. [RTL]
		MISCELLANEOUS	
Z9101	ML-614S/ZT	BATTERY	[MBI]
n		CCD C.B.A.	[AVC-SPC]
		CAPACITORS	
C3101	ECJ1VB1C105K	C.CAPACITOR CH 16V 1UF	[AVC-SPC]
C3103	F1J1A106A023	C.CAPACITOR CH 10V 10UF	[AVC-SPC]
		TRANSISTORS	
Q3101	2SC4627JCL	TRANSISTOR NPN	[AVC-SPC]
		RESISTORS	
R3101	ERJ2GEJ470	M.RESISTOR CH 1/16W 47	[AVC-SPC]
R3102	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	[AVC-SPC]
R3105	ERJ2GEJ680	M.RESISTOR CH 1/16W 68	[AVC-SPC]
R3105	ERJ2RMJ680X	M.RESISTOR CH 1/16W 68	OR [AVC-SPC]
R3106	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	[AVC-SPC]
R3107	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	[AVC-SPC]